Volume 11, No. 6 **November, 1956**

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. . . Edward H. Graham

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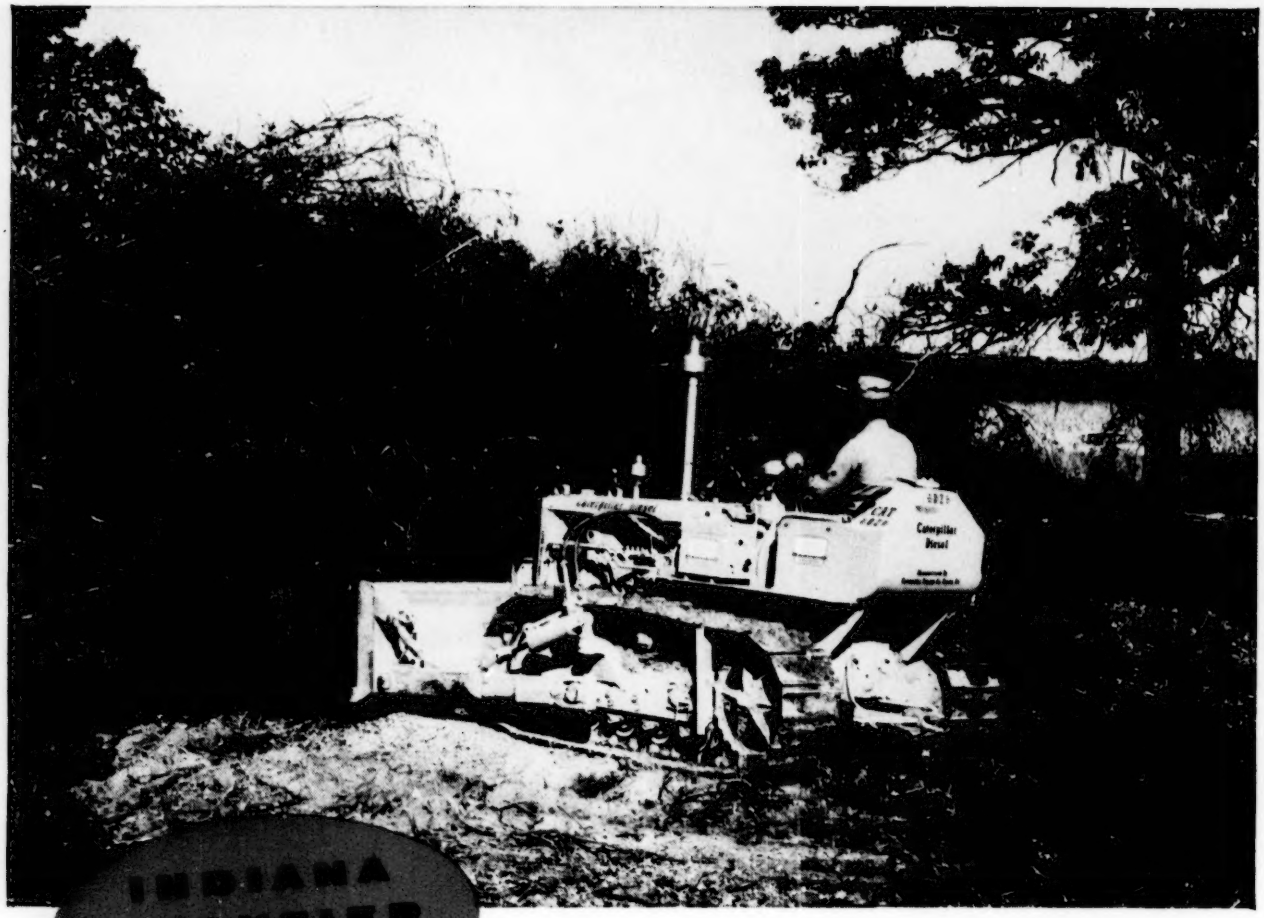
The Human Side of Watershed Programs
. . . E. J. Niederfrank and Wendell R. Tascher

Book Reviews: Resource Productivity, Returns to Scale, and Farm Size; Farm Appraisal; The Great Plains in Transition, and Farm Management Manual—A Guide to Reorganizing a Farm.



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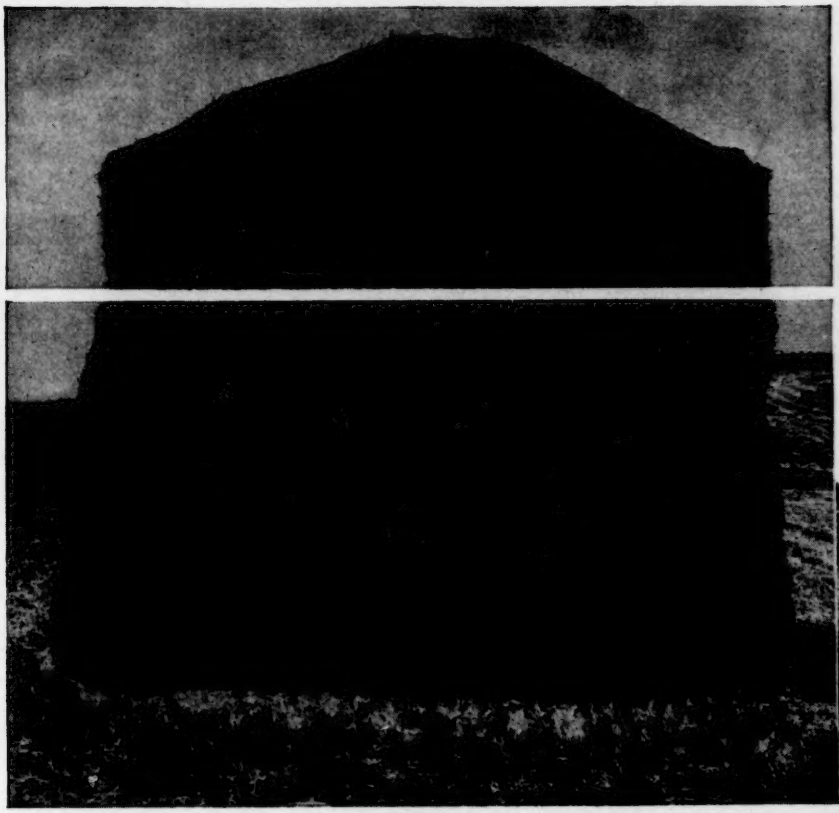

In experimental farm studies conducted in Washington State, the yield of alfalfa was increased nearly 40% by adding Moly to molybdenum-deficient soil. The fodder below the white line in the stack at the left indicates yield on moly-deficient soil. Volume above the line indicates increase produced by addition of Moly to soil. Photos courtesy of John Deere, Moline, Illinois.

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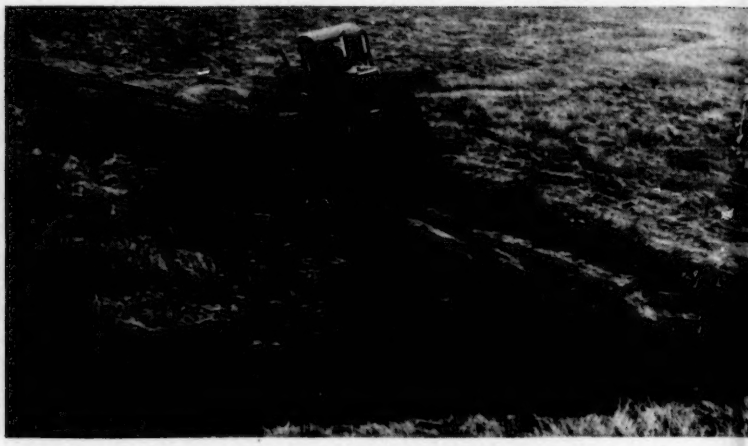

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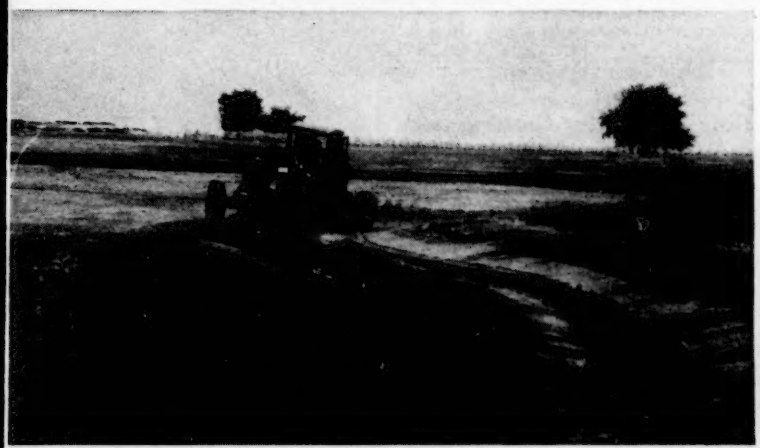

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Journal of SOIL AND WATER CONSERVATION

VOLUME 11
NUMBER 6

TO ADVANCE THE SCIENCE AND ART OF GOOD LAND USE

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POST OFFICE ENTRY: Second class mail privileges authorized at Des Moines, Iowa.

MEMBERSHIP: Annual membership is on a calendar year basis and is $5.00 per year of which $1.50 is for subscription to the JOURNAL and 25c for NOTES AND ACTIVITIES. Subscription for the JOURNAL to libraries and others is $5.00 per year. Single copies are 85c each.

CORRESPONDENCE — Concerning manuscripts, books for review and other editorial matter should be sent to the Editor, 1912 Grand Avenue, Des Moines, Iowa.

BUSINESS CORRESPONDENCE—Concerning remittances and questions should be sent to the Executive Secretary, 838 5th Avenue, Des Moines 14, Iowa.

CHANGE OF ADDRESS: Notice of change in address should be received two weeks before the date of issue on which the change is to take effect. Both the old and the new address should be sent to the office of the Secretary.

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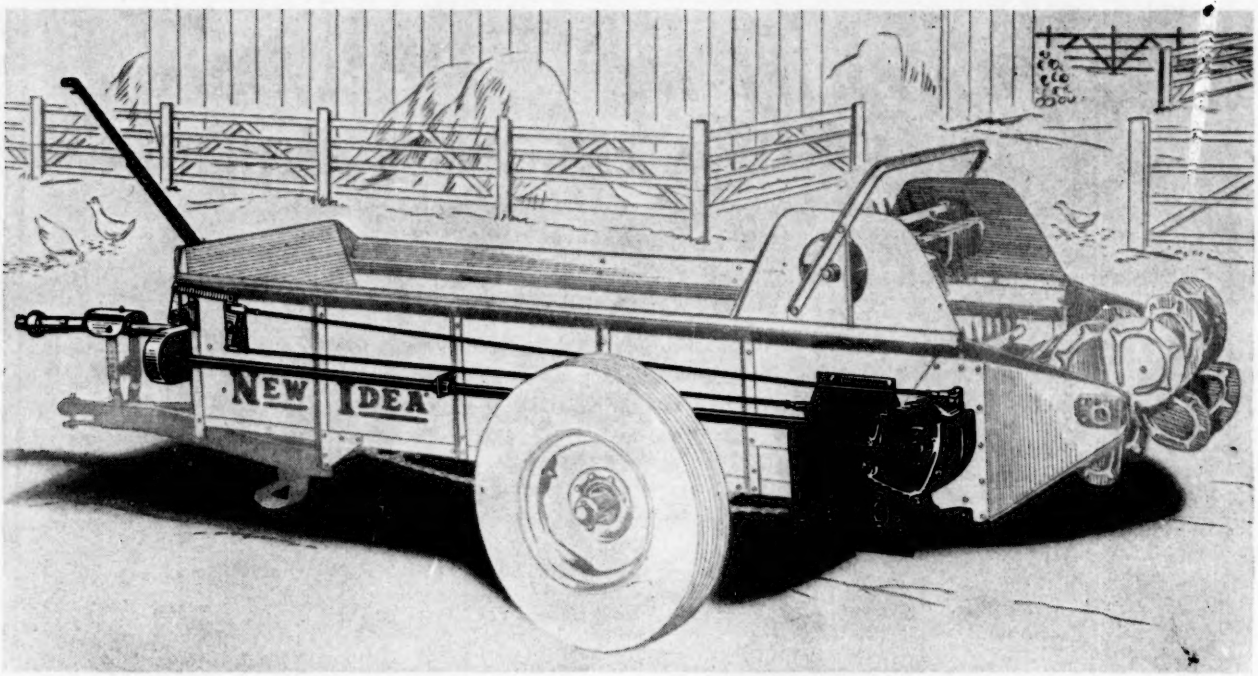

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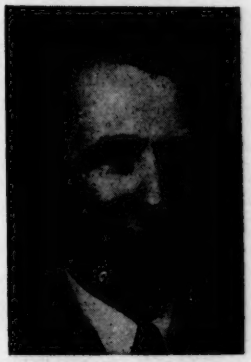
Professional Leadership in Conservation

EDWARD H. GRAHAM



Edward H. Graham

Today, natural resource conservation is handled piece by piece. Yet, the job could be done more effectively after all parts are integrated into a single, well-planned unit. Perhaps this integration awaits an enlightened leadership—a leadership with sufficient vision to fit the parts together and understand the whole. As a member of the Soil Conservation Society of America, this challenge—the need for leadership—is hurled directly at you. Doing your part?

AS THE Soil Conservation Society of America enters its second decade, it seems fitting and proper that we take note of our opportunities for professional leadership.

One of the unique features of our Society is that there is no single profession characteristic of its activities and objectives. Those prepared for careers in agronomy, wildlife management, soil science, soil conservation, forestry, range management, engineering, hydrology, economics, and other subjects relating to natural resources are members of the Society. Anyone engaged in an occupation in which he practices or advances the science and art of good land use has a place here.

Through our Society we can provide broad professional leadership in conservation. We are already doing this through the JOURNAL and other Society publications, Society committees, and chapter activities. I should like to point to further action.

Need Integrated Program

Let me first give two examples that illustrate the need for broad leadership in conservation.

(1) Today there are increasing demands that administration of natural resource programs be so coordinated that duplication, overlapping, and waste be reduced to a minimum. These demands are heard at local, state and national levels. In local communities, soil conservation districts and watershed organizations are striving for integrated programs. State governments are studying their natural resource activities and some states have reorganized to permit coordinated effort. As a result of reviews of the Federal Government, changes have been undertaken in the administration of some of those departments and agencies that deal with natural resources.

All of these actions indicate the need for closer coordination—coordination that can best be achieved when those engaged in it possess knowledge and appreciation of the resource management job as a whole.

(2) There is need for broad leadership, also, if we are to resolve conflicting demands for the use of land. The individual land operator is today faced with decisions as to whether it is best to use his land for cultivated crops, grass, trees, wildlife, or other productive purpose. Watershed activities are pointing up community values of land for flood prevention, recreation, and other purposes apart from its value to the individual. We hear a good deal now about conflicts between public and private use of land. For example, should high-class farmlands be converted to highways and airports, or migratory waterfowl areas be drained for cultivation? Within the past decade, surburban and industrial developments have absorbed great acreages of good agricultural land. In some sections this movement has reached alarming proportions and caused zoning, taxation, and statutory changes of perplexing order.

Conflicting demands for land are going to be most reasonably resolved when those who must deal with them have at their command an understanding of the whole problem involved.

To help meet such needs for leadership, the professional conservationist, in whatever specialized field he may function, has a responsibility above and beyond that of the specialty in which he received his major training and gained his primary experience. The engineer who is only an engineer, the forester who is concerned only with trees, the soil scientist who is interested only in soils, and the

Edward H. Graham is the 1956 president of SCSA. He is head of the Plant Technology Division of the Soil Conservation Service, Washington, D. C. *This article was given as his presidential address at the eleventh annual meeting of the Soil Conservation Society of America, on October 15, 1956, in Tulsa, Oklahoma.*

others whose professional efforts are circumscribed by subject matter lines cannot provide the kind of leadership that is now demanded of them.

We need expert knowledge and skill more than ever before; we need more intensified training of our professional people; and we need men and women experienced in every science and technology that deals with the care and use of the land and land resources. *But such highly trained, experienced personnel must today assume responsibility beyond their specialized capacities.*

Except for an occasional individual, the professional conservationist today is not equipped to help with the solution of such problems as the administration of resource programs or conflicting demands for land. Nor is he very conscious of the social and economic consequences of his specialized activities. He meets such standards only if his scholastic training and his experience have been exceptionally comprehensive, and he has been fortunate enough to work in an organization which has given special attention to coordinated activities. But this combination is as yet all too rare.

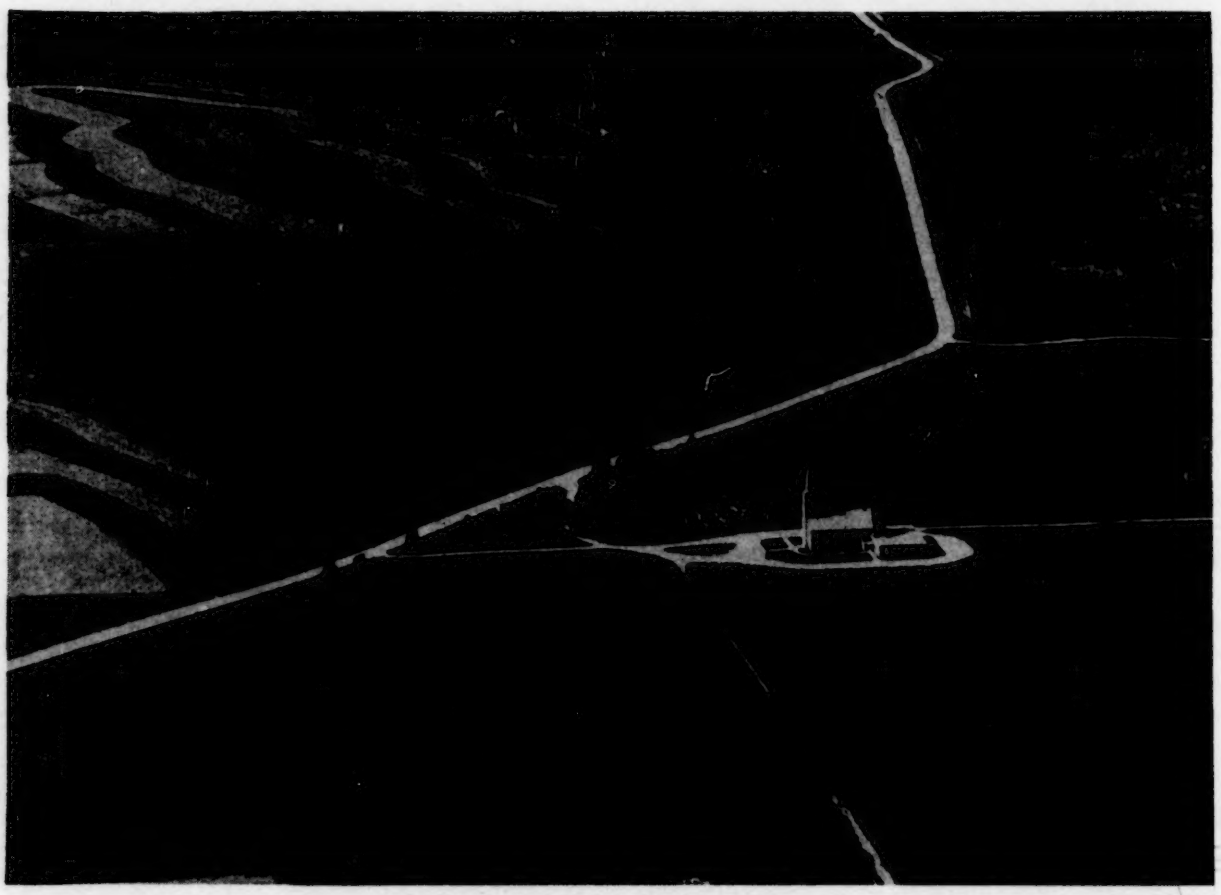
To help make it possible for the professional conservationist to exercise proficient leadership in coordinated resource programs, I propose that the Soil Conservation Society of America call for:

(1) broader basic training of professional conservationists, and

(2) coordinated natural resource policies for the States and the Nation.

With respect to broader basic training, we need the best qualified teachers, scientists, technicians, and administrators in the conservation field that it is possible to produce.

Our problem is to find a way in which the student can be adequately trained in a specialized field and at the same time obtain some knowledge and appreciation of related fields together with a sense of the social significance of his work. For the most part, the graduates of our colleges and universities are not so trained. In fact, the student often emerges with an actual prejudice against any or all subjects not associated with his major field of training. A number of colleges and universities have



All through this country, conservation needs leaders —leaders with enough vision to understand and interpret the broad social significance of this cause.

All conservationists need a broad technical training and a wide background of experience. Those who develop a rich understanding of conservation in its broadest aspects will become the true leaders, regardless of the title they hold.

taken steps to overcome this difficulty, but they are as yet in the minority.

The problem of adequate training is both undergraduate and graduate. During his undergraduate years the resource specialist, in whatever field he may be specializing, should be encouraged to take courses outside his own field, and facilities should permit him to do so. If, for example, he majors in agronomy, he should have courses not only in related subjects, such as soils, animal husbandry, fertilizers, and agricultural economics, but in such subjects as history, literature, ecology, sociology, and political science. Without such broad basic training the student emerges as a technician limited to his own field and unprepared to adequately relate his work to the work of others, or to realize its effect upon the community.

The excuse that there is not time enough for such broad training seems no longer valid. Not time alone, but such barriers as college departmentalization have limited our training. In some schools it is almost forbidden for a student to take a course in a department other than that in which he majors. Our colleges can do something about that.

Although undergraduate training can provide wider opportunities than at present, it must above all prepare a student for employment. To that end the student as an undergraduate must concentrate his primary efforts in a particular field.

In graduate work there must be opportunity to expand his horizons. Here the barrier of departmentalization should not exist, and the student should find greater freedom of choice in his selection of subjects.

Methods for Broad Training

Opportunities for broad training are in fact now being afforded by such devices as land-use seminars, inter-departmental curricula, and field studies of actual problems. Unfortunately, such efforts are still limited to a few institutions.

A method with much promise is the joint thesis, wherein several students, from several departments, study a common problem in resource use, and make their separate but related contributions to the coordinated recommendations for solution. This technique has the advantage of strengthening a student's specialized training at the same

time that it makes him intimately conscious of the whole job to be done. It furthermore prepares him for the kind of task he will meet when he leaves school. Present technicians cannot be justly accused of inability to achieve coordination when their education has given them no training in the subject.

The Soil Conservation Society has not yet taken steps to urge upon our educational institutions the need for broad training of those who plan to make careers in some phase of conservation. It is my suggestion that the National Council establish a permanent committee of the Society for this purpose. I also believe that several chapters are ready to undertake this objective within their states.

Comprehensive Resource Policies

In addition to broad training for conservationists, we also need to create a setting in which they can operate effectively. This brings me to the suggestion of comprehensive state and national policies for renewable natural resources.

It is not surprising that we tend to manage our resources piecemeal. Historically we gave attention to resource management as the need for it developed. Not until after the Homestead Act of 1862 did resources demand national attention.

In 1871 a Fish Commission was founded, which later became the Federal Bureau of Fisheries. It is now part of the Fish and Wildlife Service. The first National Park —Yellowstone—was established in 1872. In 1876 the first Forestry Agent was appointed. The U. S. Geological Survey was organized in 1879, the Division of Irrigation in 1888. The Bureau of Forestry, created in 1898, became the Forest Service in 1905. In 1902 the Federal Reclamation Act was passed. In 1905 the Bureau of Biological Survey was set up, having started as a USDA Division of Economic Ornithology and Mammalogy. It is now part of the Fish and Wildlife Service. The National Park Service took shape in 1917. In 1935 the Soil Conservation Service was established, after two years as the Soil Erosion Service. In 1955 the passage of the Small Watershed Protection and Flood Prevention Act for the first time expressed objectives in resource management on a natural area basis, and revealed more clearly than ever before the need for coordination.

Coordinate Agencies

Federal action in behalf of conservation can be matched by action of the states. I sketch the federal history to indicate how existing national authorities for conservation work developed. Responsibility for conservation of our renewable natural resources at the national level still rests essentially with the various agencies originally established to give attention to them.

While efficient management and administration require an arbitrary division of labor, more and more is heard these days about the need to coordinate the efforts of the various agencies that have become responsible for national leadership in natural resource fields.

See Task as a Whole

For the first time in our history, we, as a nation, have come to the place where we can now give attention not only to the separate segments of the conservation job, but to the task as a whole. The people expect it to be done and the people themselves have in fact shown ways in which it can be accomplished.

We need only mention the Muskingum Conservancy District, the Salt-Wahoo Watershed Association, and the Public Land Committee of the National Association of Soil Conservation Districts to remind ourselves that the largest and most complex federal and state agencies can be brought to work together in the public interest.

The Congress should act to provide general guides for achieving coordination. Earlier this year the Society established an Objectives Committee, which has already stated the need for coordination of governmental conservation activities and suggested ways and means by which the Society may promote it. There is the same need for comprehensive natural resource policies for the individual states and territories as there is for the nation as a whole. Here is another opportunity for action by chapters.

The Conservationist's Responsibility

In summary, let me say that the professional conservationist, regardless of what specialized phase of conservation he may represent, has an ethical responsibility to think and perform beyond his daily task and his particular specialized function. He must relate his work to the work of others and to the economic and social consequences of his actions. Those responsible for his training can help prepare him to do this. Those responsible for our laws and for the administration of resource programs have an obligation to establish the kind of working environment in which he can exercise such broad performance.

And the Soil Conservation Society of America must assume its share of responsibility. Among the many things the Society can do, I urge that we vigorously promote:

(1) improved professional training in natural resource management, and

(2) comprehensive policies for care and use of natural resources for the states and the nation.

It is my sincere hope that by such means our Society may further develop professional leadership in conservation.

Economic Considerations in Agricultural Land Use from Private and Public Viewpoints

FRANK W. SCHALLER AND JOHN F. TIMMONS

The public does have an interest in privately owned land and the way this land is used. Here are some considerations that give the public a right to voice an interest in private land. And some limits beyond which land use becomes land abuse.

CITIZENS of the United States have a real responsibility to themselves and to the rest of the world to properly utilize their land resources. Several reasons may be given in support of this statement.

First, events of the past quarter century have placed us in a position of world leadership. Since many of the world's people do not have enough to eat, some countries find it difficult to understand and follow the leadership of a nation that piles up huge surpluses of food and fibre materials, and even cuts production when others are in want.

Second, unsettled world conditions demand that we keep our land resources intact and capable of high production for our protection and to help undeveloped areas of the world.

Third, public funds for land resources are scarce and care must be taken that these funds are invested wisely in our present and future welfare.

Frank W. Schaller is Associate Professor of Agronomy and John F. Timmons is Professor of Agricultural Economics at Iowa State College, Ames, Iowa. *This article is Journal Paper No. J-3055 of the Iowa Agricultural Experiment Station, Ames, Iowa, Project Nos. 1266 and 1094. It was presented at the annual meeting of the Soil Conservation Society of America, Tulsa, Oklahoma, October 17, 1956.*

Confusions in Land-Use Policies

Examination of current land programs and policies reveals some basic confusions and conflicts that warrant serious consideration by all citizens. A few illustrations may help to emphasize this need for considering improvements in current land utilization programs and policies.

For instance, one agency of government, the Bureau of Reclamation, is authorized to invest millions of dollars in resource developments which will help bring more land into production, while another agency, the Commodity Stabilization Service, is spending billions of dollars to support prices and to take "surplus" farm products off the market.

Another example is found in the use of historical bases for controlling acreages of tobacco, cotton, wheat, corn

This group is learning about good land use through observation and discussion. Education should play a primary role in bringing present land productivity up to the level of private profitability.

Poor land use often results in scenes like this. Short-term private interest sometimes leads to exploitation. However, public welfare demands that land be used in such a manner that benefits from land will be maximized over many generations.

and other crops. The allowable production as indicated by a historical base may be completely in conflict with the best use of land if the use during the base period was poor.

Another example is the so-called favorable "benefit-cost ratio" applied to land projects entailing public investments. Obviously a favorable benefit-cost ratio of 1.1 to 1.0 is not wise use of scarce public funds if other opportunities for greater returns from public investments are available. And often little is known about the relative benefit-cost ratios among various kinds and locations of land improvements at the time public funds are allocated to a particular land improvement project.

Another example is involved in current programs providing financial and technical assistance for certain land improvements which result in efficiencies of production to the individual farmer but may have no particular public benefit. Obviously, public funds are best used for purposes supported by substantial public interest and where such investment may be protected from private exploitation which would be a detriment to public land use objectives.

These examples may serve to remind us of certain basic weaknesses in current land programs and the need for serious study of how such weaknesses may be overcome.

Table 1. Major Uses of United States Land, 1954[1]

Use	Millions of acres	Percent of total
Cropland, including grazed cropland	482[2]	25.4
Farm pasture, including woodland	560	29.4
Non-farm grazing	392	20.5
Non-grazed forest and farm woodland	282	14.9
Cities, parks, major roads, etc.	79	4.2
Deserts, swamps, dunes, etc.	64	3.3
Farmsteads, roads, lanes, etc.	45	2.3
Total U. S. Land Area	1,904	100.0

[1] Based on recent data of the U. S. Bureau of the Census and U.S.D.A. Information Bulletin No. 140, June, 1955.
[2] Grazed cropland includes 72 million acres of this amount.

Uses made of the nation's lands are summarized in Table 1. The 1 billion, 904 million acres of land in the United States have been divided into six major use classes. Three of these use classes, cropland, pasture and woodland, make up about 90 per cent of the total acreage. The remaining three use classes, equalling 10 per cent of the total acreage, include land in cities, parks, roadways, deserts, swamps, farmstead lots, etc. These uses of the land are closely allied to climate and physical characteristics of the land including soil type, topography, cover and location. These same characteristics condition any particular land in terms of the economics of its use.

Three Types of Land Resources

The physical characteristics of land resources in terms relative to their utilization by man are threefold.

One portion of the land resource is *self-renewing*, such as rainfall, temperature, air and sunshine. These elements are constantly present and are little affected by use.

The second portion of land resources—fertility and moisture—is *exhaustible by use, but may be renewed.* It may be used up within limits and replaced again within limits.

The third portion of land resources is *exhaustible but not renewable* or renewable only with great difficulty. This is the basic soil material which may be washed away through gullying and severe sheet erosion but is very difficult, if not impossible, to replace.

These three kinds of physical resources characterizing our land, make land a very complex natural resource.

The badly eroded field shown in the picture on the opposite page has taken on a new look. Gullies have been bladed in and terraces built. Education, incentive payments and technical assistance all played a part in achieving land use consistent with both public and private interest.

But they also afford a better understanding of the nature and processes of land utilization. At least, they provide the natural basis to which economic principles can be applied more discreetly than if the soil were considered as a one lump sum resource.

Objectives of Land Utilization

Objectives of land utilization start and end with man. Land is important only to the extent and manner in which it contributes to the satisfaction of people's wants. Wants as used in this article should also be thought of as including needs of people.

Land cannot be productive or contribute to people's wants until used with the production factors of capital, labor and management. These are scarce factors as is also the land itself. Thus, the objectives of land utilization is one of getting the most of the things people want out of land in return for least amounts of labor, capital, management and land used in the process. The objective is truly one of economizing our total resources including labor, capital and management as well as land.

Thus, the use of land and the extent and nature of outlays for land improvements (including soil conservation) are basically and finally questions of economic analysis. From the standpoint of individuals, land expenditures are subject to the test of maximizing returns and efficiency of resource use over time. From the standpoint of the entire society, the time may extend to generations. In both instances the primary problem involves allocation of scarce resources to serve particular ends.

In both private and public land use, resource allocation decisions are complicated by competing ends other than land use. For example, the farmer's objectives of paying off the mortgage, educating his children or modernizing the farm home all compete with land investments. Similarly, land investments compete for public funds with education, national defense, roads, health and other high priority public responsibilities.

Principles of Land Utilization

Since 1920, the amount of cropland in the United States has remained relatively constant. (See Table 2.) However, population has increased by about 60 million people. This means that the acres of cropland per person have decreased from 3.8 acres in 1920 to 2.5 in 1955.

Despite this decrease in cropland per person, the agricultural industry has succeeded in providing a constantly increasing per capita supply of agricultural products. This increase in agricultural production is due largely to

Table 2. Population, Cropland and Agricultural Production Trends in the United States, 1870-1975

Year	Total Population[1]			Total Cropland[2]		Ag. Production[3]	
	Millions	Index 1870=100	Percent change[4]	Millions of acres	Acres per person	Index 1870=100	Percent change[4]
1870	38.6	100	—	—	—	100	—
1880	50.2	130	30	180	3.8	152	52
1890	62.9	163	26	248	3.9	190	25
1900	76.0	197	21	319	4.2	242	27
1910	92.0	239	21	347	3.8	276	15
1920	105.7	274	15	402	3.8	304	10
1930	122.8	318	16	413	3.4	338	11
1940	131.7	341	7	399	3.0	378	12
1950	150.7	390	14	409	3.2	455	20
1955	155.0	427	9	414	2.5	509	11
1975	210.0	542	27	434	2.1	—	—

[1] From reports of the U. S. Bureau of the Census. The estimate of 210 millions for 1975 is the average value of the low and medium projections of the Census Bureau, which range between 200 and 221 million.
[2] Cropland data to 1950 are from Census records and publications. Cropland data for 1955 and estimates for 1975 are from U. S. Department Agricultural Information Bulletin No. 410, issued in June 1955, pp. 41-55.
[3] Production data for 1950 and 1955 from Agricultural Research Service PERB, U. S. D. A. Changes in Farm Products and Efficiency, ARS 43-33. 1956.
[4] Percent change is the change occurring for each period indicated by the first column.

Erosion control structures are often too costly for the individual to install. But they may be economically justified from the public viewpoint because of off-site benefits and long-term public interest in maintaining land resources.

technological developments and improved methods of farming.

Contrary to Malthusian reasoning, it appears that agricultural production at the present time is outstripping population. How long this will continue is unknown. However, these relative changes in agricultural production and population are reflected in today's problems of agricultural surpluses. They are influencing today's land use, and their relationships in the future must be considered in long range land use planning.

Since the purpose of land utilization is to provide people with the things they want, first attention should be given to the wants of people. Until recently, people's wants entered directly into the determination of farm production through consumers' "votes" in terms of dollars in the markets.

At the present time, price supports, production controls and other types of resource allocation devices are being substituted for consumer dollar "votes." For this reason, extreme care must be exercised that our land and other productive resources do not become dissipated in producing much more of certain things, potatoes for example, than people want.

Consequently, increased attention must be given to population composition and distribution and to the changing preferences of consumers from the demand side and to technological and substitution developments from the supply side of the demand-supply equation.

This problem of balancing satisfaction of present and future wants is the heart of the soil conservation problem. In satisfying today's wants, care must be taken that land resources are not used up, but instead, maintained in order that tomorrow's citizens may continue to have opportunities for satisfying their wants.

Its solution begins with an approximation of what the future wants may be. This involves consideration of population growth, living levels, foreign trade and technological improvements. Each present generation has a responsibility to future generations to use land for present benefit in such a way that tomorrow's citizens will have the same or greater opportunity of satisfying their wants.

There is some evidence that present and past generations have benefited from land exploitation, sometimes at the expense of future generations. Serious soil erosion, depletion and abandonment of some lands support this conclusion. On the other hand, present generations cannot be expected to "save the soil" and not use it just for the sake of an unknown future.

The soil conservation problem, thus, is one of striking a balance in land use between generations. This reasoning may be restated in terms of four economic principles.

1. *The principle of maximization*—This involves getting the most out of the land (1) in terms of what people want, (2) in terms of capital, labor and management that go into land and (3) for future as well as present generations.
2. *The principle of sustained productivity*—This is

The heart of the soil conservation problem is balancing satisfaction of present and future wants. With good land use such as shown above, today's wants can be satisfied and land resources maintained to provide equal or getter opportunity for tomorrow's citizens.

closely allied to the maximization principle and involves keeping the land at an optimum level of productivity over time. In case of the exhaustible but renewable soil resources—fertility and moisture—the problem is one of achieving a balance between depletion and accretion over time.

3. *The principle of rationing*—In the case of the exhaustible but non-renewable soil resource, primarily soil material, it may become necessary to restrict present use in the interest of rationing the resource over time. Thus, there may well be a minimum level of use beyond which the present generation cannot go without impairing future satisfactions wanted from the land.

4. *The principle of substitution*—Substitution of production factors of land, capital, labor and management for each other is possible in achieving a particular amount of production. Thus, consideration must be given to what combination of all these factors will yield best the kinds and amounts of products that people want.

If the effect of a program is to veer methods of land-use away from "optimum" combinations of resources, this basic weakness should be corrected by adjusting the program, or compensated for by other attributes of the program. Of course, combinations of productive factors are influenced by factor and product, prices and costs, and therefore, change from time to time.

In using lands most efficiently to meet human wants over time, serious thought should be given to the level of soil productivity to be either achieved or maintained. Presumably, any land-use program will have some influence on the level of productivity. Thus in selecting a land-use program, we have the choice of maintaining, increasing or decreasing the level of productivity in light of (1) demands for products of the land and (2) best combination of land, labor, capital and management.

It may not be feasible or desirable to maintain a particular level of soil productivity year in and year out. However, there is an upper and lower limit of use variation. The upper limit is something short of a virgin or unusually high level of productivity and the lower limit should stop short of using up the non-renewable resource of the soil. This may be regarded as the *zone of permissible land use variations.*

There may be two major kinds of land use variations from the desired level of productivity. First, there are cropping intensity variations in which we "disinvest" our soils. This, for example, may be through growing cotton

or corn continuously without adequate soil management practices. On the other hand, we may "invest" our soil through growing legumes or making soil improvements such as liming, fertilizing and terracing.

Second, there are business cycle variations in land use. In periods of low demand, low prices and farm surpluses like the 1930's, should we not invest in our soil resources? On the other hand, during years of high demand, high prices and war needs like the 1940's, was it not wise to disinvest our soil resources?

The important point is to guide the use variations (1) to stay within the zone of exhaustible but renewable resources of the soil and (2) to average out the level of productivity to be desired over a period of time.

Implications for Public Land Policies

What should be our policy regarding investment and disinvestment in our soil resources during the late 1950's? The answer to this question is fundamental in determining amounts of public funds needed to achieve publicly desired levels of land productivity.

Although most of the agricultural land of the nation is in private ownership, public interest forbids individuals to exploit their land to the detriment of future generations. Land resources are not the absolute property of any particular generation or individuals.

Public welfare demands that the land be used in such a manner that the benefits from land will be maximized over many generations. Private interest, however, may have a planning horizon of only months or perhaps one generation.

Two general types of conflicts between individual and public interests may exist. First, public interests in land may be much longer term than the short lived interests of individuals. Second, individuals may gain from misuse of the land for a few years by shifting part of the costs of misuse off their farms to neighbors and to the general public.

An example of this situation is where a farmer with a large amount of erosive cash crops such as corn and cotton, gets a larger income for a few years but the resulting excessive water runoff, erosion and siltation covers up neighboring land, washes out roads and bridges, fills up reservoirs and contributes to downstream floods.

One of the most difficult land-use problems is how to determine and protect public interests in private lands without seriously jeopardizing the individual's private rights in his lands.

Oftentimes, the publicly desired level of land use is above the level of use most profitable to the individual farmers. An example of this situation may be found in gully control structures which the individual cannot afford to make but which may be economically justified from a public viewpoint because of (1) off-site benefits and (2) long-term public interest in achieving and maintaining a particular level of land productivity.

The responsibility for maintaining the productivity of land up to the level of private profitability would seem to rest largely on the individual land user. On the other hand, there would seem to be a clear cut public responsibility to bring the level of productivity from the level of private profitability up to the publicly desired level.

In view of the scarcity of public funds available for land improvements, it would seem that these funds should be spent largely beyond the level of private profitability. That is, if it is profitable for farmers to carry out a certain practice whatever it might be, why should direct public expenditures be used?

Therefore, in using public funds as grants, it would appear that a separation should be made between (1) those practices which are profitable to the individual and which he might carry out without financial asistance and (2) those practices where financial aid is necessary to achieve the publicly desired level of land use.

Primary Role to Education

How can public funds spent on private land practices and improvement be economized and protected? In the first place, it would seem that in bringing the present level of land productivity up to the level of private profitability, education should play a primary role. If the farmer becomes aware of what land practices are most profitable to him, could we not expect him to follow those practices? Incentive payments and technical assistance may be necessary to supplement education to get practices started.

But once the farmer is aware of the profitability of such practices it would seem that public resources should be conserved for achieving the publicly desired level of land use that would not otherwise be achieved. If capital is the limiting factor for the individual to reach his most profitable level of land use consistent with public interest, it would seem that credit rather than grants should be made available.

Since public funds may continue to be scarce in relation to needs for land, special care should be exercised to protect public investments from (1) wasteful dissipation and (2) conversion into private gains.

Failure of an owner to adequately maintain a public investment in his land should perhaps result in his being required to reimburse the government for unwarranted dissipation of the investment. If public expenditures become exceedingly large, and particularly when the benefits of such investments are primarily off-site, it might be desirable for the public to acquire the site in order to protect its investment. In any case, serious attention should be given to whether or not adequate arrangements have been made to protect public investments from unwarranted deterioration and excessive exploitation.

Expanded Opportunities for Watershed Development

CLIFFORD R. HOPE

The watershed program carries an almost limitless potential for both conservation and flood prevention. It is worthy of widespread popular support. In fact, there's ample opportunity for everyone to contribute in some way toward the success of watershed development. Yet, warns the author, there is opposition. And those who favor the program may have to stand up and fight for their belief.

This country has just made a start on watershed development. In this article, Congressman Hope discusses (1) need for the program, (2) legislation to support watershed development and (3) some dangers the program faces.

TODAY THIS NATION is water conscious as it has never been before. More and more it is being brought to our attention that water is the primary limiting factor in the development of cities, industry and agriculture, not only throughout the West, but in many parts of the humid East. The key, not only to sound resource conservation, but to our future progress as a nation, will to a considerable extent lie in our success or failure with water —that is, in the way we handle, conserve, utilize and control it.

Today the use of water in this country amounts to about 200 billion gallons a day, with the prospect that it will not be many more years until we will be using twice as much. This poses most serious questions for our future as a nation.

The difficulties now faced by many cities which depend upon surface run off for their water supply are well known. Even cities and industrial establishments that get most of their water from underground sources are having their difficulties.

But when we realize that our steel industry uses four trillion gallons of water a year and that the petroleum industry uses one and a half trillion gallons every year

The Honorable Clifford R. Hope is retiring as U. S. Representative from Kansas after serving 30 years in Congress. He is widely known for his contributions in the field of agricultural legislation. This article was given as an address at the annual meeting of the Soil Conservation Society of America, Tulsa, Oklahoma, October 16, 1956.

Each farm pond provides a small reservoir for flood water storage. But more important, good pond management requires that land above be treated for erosion control. This holds more water on the land where it falls and helps prevent floods below.

S.C.S. Photo

and that the daily household water use per American citizen amounts to more than 50 gallons, we can get some idea as to how things are going.

And yet this water—which in many places is becoming so difficult to get—is the same stuff that on all too many occasions comes roaring down our creeks and rivers, spreading hardship and destruction.

What is the difference between the pure, clear water that flows from our springs and wells and the yellow torrent of silt and debris that periodically lays waste to our river valleys? The essential difference is that the clear water, the usable water, stayed for a time where it fell. The other did not.

The watershed programs which are receiving so much consideration in all parts of our country today are based upon the realization that the way we can get good and adequate water supplies and at the same time reduce our destructive floods is to *get the rain and the melting snow into the ground.*

The ground is the greatest and the most wonderful reservoir of all. There is more natural water storage capacity in the earth than in all the man-made structures and reservoirs we can ever hope to build on top of it.

I do not want to be misunderstood. I do not mean to say that anything we can do to the land and the small streams in the upper watersheds is going to persuade all the water to soak into the ground and to prevent forever the rapid accumulation of run-off water sufficient to cause floods in the river valleys down below.

What I do mean to say is that every drop of water which can be retained in the area in which it falls, either in the earth or in small retarding structures, is one drop subtracted from a potential flood and one drop added to our useful water supply.

Early Water Legislation

While this great interest in water which I have mentioned is of somewhat recent development, it doesn't mean that the idea of upstream watershed development is one which has just been considered in a legislative way within the past five or six years, although it is true that great strides have been made during that time. The fact is that water conservation was an important part of the Soil Conservation Act of 1935.

In the following year, Congress passed the 1936 Flood Control Act, primarily designed to cover works of improvement for flood control in downstream locations. In that Act, however, the Secretary of Agriculture was authorized to make surveys on watersheds in the interest of soil erosion prevention, waterflow retardation and sediment control.

Under the authority of this legislation, 11 projects were approved and authorized in the Flood Control Act of 1944. These were all large projects. None of them has yet been completed. Appropriations have been made for them ever since their commencement back in the late 1940's. But these appropriations have been so meager compared with the amount of work to be done, that it will still be many years before these projects are completed although appropriations in recent years have been stepped up somewhat. Although these 11 projects were all that were actually started, surveys covering a considerable number of additional projects were made by the Department of Agriculture but never acted upon by Congress.

Upstream Work Lost Out

It was presumably the intention when the 1936 Act was passed that there would be a coordinated program of work on the upper watersheds by the Department of Agriculture, and on downstream projects by the Army Engineers, but it did not work out that way.

The full measure of the failure of the 1936 Act to bring about upper watershed development somewhat comparable with the work done on downstream projects is shown by the fact that these 11 projects were all that were ever started and that the total amount of funds expended or made available for them up to the end of the fiscal year 1956 was 59 million 200 thousand dollars. For the fiscal year 1957, 12 million dollars more were appropriated, 300 thousand of which was withheld for emergency use.

By way of comparison in round figures, the flood control improvements completed and placed in operation by the Corps of Army Engineers to date have cost one billion 500 million dollars. The projects which were in a construction stage in 1955 were estimated to cost four billion 200 million dollars. Additional projects in the planning stage were estimated to cost three billion 300 million. Other flood control projects authorized, but on which no work had been accomplished, were estimated to cost two billion 100 million.

In other words, the total flood control program on the larger rivers of the nation today, including projects completed, under construction, being planned or authorized, represents a total cost of 11 billion 100 million dollars. Practically all of this is federal money, since it is estimated that the total nonfederal contributions to the national flood control program have been less than six and one-half percent.

New Approach Sought

While it is not contended that the amount spent for upstream flood control during this period should have been comparable to downstream work, it was contemplated, I think, in the 1936 Act, that the two programs should move concurrently.

Certainly the figures above show the utter failure of the 1936 Act as far as setting up a national watershed pro-

This meeting of a group of Ohio folks is typical of the first step toward a watershed program. The initiative must come from the folks in the watershed itself.

gram is concerned. I do not mean by this to criticize the projects that have been set up—some of them, including the Washita in this state, have been extremely noteworthy—rather it was the failure to expand the program which merits criticism.

It was this failure which finally brought about a different approach to federal aid for watershed projects. This new approach is one which comes straight from the grass roots as the result of widespread interest on the part of members and officials of many conservation organizations.

Frankly, I am proud of the part that the House of Representatives has played in expanding opportunities for watershed development. Every piece of legislation which I will hereafter mention originated in the House, and in practically all cases passed that body with little or no opposition.

Local Interest in Watersheds

The first concerted move in the House of Representatives to bring about a new approach to the problem of water conservation was taken by a subcommittee of the House Committee on Agriculture under the able leadership of W. R. Poage of Texas. This subcommittee held hearings in Washington during the Congressional Session of 1951 and, after adjournment of the session, held field hearings in Texas, Colorado, Kansas and South Dakota. These hearings were all interesting and well attended, and indicated to the committee that the country was considerably ahead of the Congress in its interest in small watershed problems.

In the 1952 session, the subcommittee reported a watershed bill introduced by Poage. This bill was subsequently reported unanimously by the full committee. Mainly because of opposition from certain government agencies, we were unable to get a rule for the bill. Consequently it was not possible to bring it before the House for action in that session.

All of this good preliminary work, however, bore fruit in the next Congress which convened in January, 1953. Bills were introduced in that session by several members, including Poage and myself.

Pilot Watersheds

While these bills were pending, another important step was taken by the Congress. This was the inclusion of the so-called pilot plant projects in the Agricultural Appropriation Bill passed in the 1953 session. The projects for which this appropriation was made were selected from those on which the Department of Agriculture had made surveys under the authority of the 1935 Act, and where local people and organizations had indicated their willingness and ability to go ahead and cooperate in carrying out their part of the work and expense. In most cases much work had already been done locally. Fifty-eight projects in all were included and in most cases construction has proceeded rapidly.

As of June 30, 1956, 242 flood water retarding structures had been built, 125 stabilizing and sediment control structures had been constructed, and 95.2 miles of channel stabilization and improvement had taken place under this program. About 50 percent of the cost of these structures will be borne by the federal government, the remainder by local and state interests. The total estimated federal cost is 34 million 200 thousand dollars. The appropriation for 1957 is seven million 700 thousand dollars.

Seemingly this program was gotten up in a hurry. Certainly it went through Congress with a minimum of discussion and with unusual speed. But the fact is that the pilot plant program was not developed quickly or

Good land cover and proper use are on-the-farm practices which go with a watershed program. These Mississippi Herefords are eating fescue and white clover.

S.C.S. Photo

suddenly, but rather as the result of work over a period of years which had been done by the Soil Conservation Service, working with local groups in all parts of the country. The only thing sudden about the program was the decision to go ahead and appropriate funds under the authority of the 1935 Act and do the job that needed to be done through cooperation between local committees and the federal government.

While the pilot plant projects marked the first specific step to be taken in getting the watershed program off to a new start, it is limited, of course, in its extent. Its importance comes not only from the fact that it marked a new approach, but also because it constituted a program on which it was possible to make an immediate start.

Pilot Watersheds Provide Data

Furthermore, because these projects are widely scattered, there is a great variation in rainfall, topography, climate and types of soil. Thus there will be an opportunity to study the effects of these installations on run off, erosion, sedimentation and evaporation. Projects on which work can be completed within a comparatively short time will serve as demonstrations of what can be done in this field.

In order that scientific studies may be carried out, these projects will include the necessary instruments to measure and record the effects and results. Also, cooperative arrangements have been made with the Geological Survey and the Weather Bureau, for their help in measuring, recording and analyzing these effects.

However it should be very clearly understood that these projects are not experiments. They are being installed as the result of almost 20 years of experience on the part of the Soil Conservation Service in projects of this type. Every installation is expected to serve a useful purpose in the field of conservation and flood prevention.

In view of the success of the Army Engineers and other agencies in preventing a rule from being granted on the Watershed Bill in the 82nd Congress, it was the opinion of those of us supporting the legislation that if we were to succeed in the 83rd Congress we must secure active assistance from the White House. Those of us who took the matter up with President Eisenhower found him not only interested, but well informed on the subject.

The final upshot of the matter was that after study of the proposal in the White House, Bureau of the Budget and Department of Agriculture, the President sent a special message to the Congress urging enactment of the legislation. Accompanying the message was a suggested bill differing only slightly from those already pending in the House. The message came up so late in the session, however, that it was not possible to act on the legislation until the next session.

The President's support of this legislation, combined with strong support in Congress and throughout the country, made its passage certain. It passed the House without opposition, but it was bitterly opposed by the Army Engineers before the Senate committee.

As a result of this opposition, the Senate committee amended the bill in a number of material ways, greatly impairing its usefulness. However, some of the offending amendments were taken out on the floor of the Senate and still others were eliminated in conference, Army Engineer opposition notwithstanding.

As in the case of any new legislation, it took some time to get the program going. The difficulty was compounded in this instance because in many states it was necessary to enact legislation authorizing local governmental units and districts to make applications under the law. However, once these obstacles were overcome, the tremendous interest in the act resulted in a constantly increasing number of applications.

Applications Increasing

As of August 23, 1956, 565 applications from 46 states had been received from local organizations for assistance in watershed work planning. Of these, 195 applications in 45 states had been approved for such assistance.

A total of 26 work plans were approved by Congress in the last session, pending renegotiation and reapproval by the Department of Agriculture to satisfy the cost sharing and other provisions of the Watershed Act amendments adopted in the second session of the 84th Congress. These 26 plans involved an estimated total cost of 32 million 978 thousand 900 dollars and 14 million 721 thousand 100 dollars federal cost sharing.

Ten other contemplated work plans were in some stage of Washington consideration. The department expects that by January 1, 1957, 40-odd other watershed plans will be ready for final action. In the meantime, appropriations are being stepped up as applications are approved and more work gets under way.

For the fiscal year 1955, one million 750 thousand dollars were available in federal funds for carrying out the program authorized by Public Law 566. For the fiscal year 1956 the amount was five million dollars. For the 1957 fiscal year the total is nine million 800 thousand dollars. For the 1957 fiscal year the total is nine million 800 thousand dollars, including funds available for river basin water resource investigation.

I shall not attempt to discuss the details of this legislation before this well informed audience. Most of you, I am sure, are fully advised on these details and, if not, the Soil Conservation Service has excellent publications explaining not only the legislation but the regulations which have been drawn up for its administration.

Watershed Legislation Philosophy

However, I want to briefly refer to the philosophy of the legislation, although I think that is pretty well understood. The principal point I want to bring out in that connection is that this is not a federal construction program, but rather a program of federal aid for projects locally conceived, developed and carried out. The original discussion in the House Committee on Agriculture was that this program would be somewhat analogous to federal aid for highways, modified to take care of the differences between the two types of programs.

None of the changes which have taken place in the consideration and enactment of the program have changed this basic feature.

This brings me to Public Law 1018 of the 84th Congress, known as the Poage Bill. This bill amends the Watershed Protection and Flood Prevention Act in several particulars. There are four provisions which I especially want to mention.

One is that it provides for multiple purpose projects—that is, projects under the Watershed Protection and Flood Prevention Act are not now limited to flood prevention purposes. They may embrace other uses, such as municipal and industrial water supply development and stream flow regulation as well as flood prevention, irrigation, drainage and other phases of water management.

S.C.S. Photo

Expanded recreational opportunity is one benefit nonfarm folks may gain from the watershed program. A dependable and adequate water supply may be even more important. But bass fishing rates high with Ed Hausenfluck of Oklahoma.

Another is that on those projects where federal aid for construction costs amounts to 250 thousand dollars or less, or which contain no structure with more than two thousand 500 acre foot capacity, need not be submitted to Congress. In the case of such projects, the period for review of plans by the Secretaries of the Army and Interior is reduced from 60 to 30 days. These changes will materially speed up consideration of plans in Washington.

Long Term Loans Set Up

Another provision sets up a program by which the Secretary of Agriculture may make loans or advancements to local organizations of not to exceed five million dollars for any single project at the federal long term borrowing rate, repayable in 50 years. A fourth important change provides that the federal government is required to bear all cost of construction for works of improvement applicable to flood prevention and features relating thereto.

None of these or other changes in the law modify the philosophy of the original act. It is still a case of federal aid for local projects which embrace proper care and treatment of the land as well as water conservation measures.

But the acts which I have mentioned do not exhaust the list of important conservation measures passed by the last two Congresses. There are at least two additional laws which I want to mention, both passed during the 83rd Congress.

Insured Loans for Conservation

The first is the amendment which the House of Representatives made to the Water Facilities Act providing insured loans for soil and water conservation purposes. I think this legislation will grow in importance as time goes by. Such loans will, in my opinion, be particularly helpful in financing land treatment measures on individual farms which must be carried out in connection with watershed programs.

To expedite these projects, it is most important to have the land treatment work contemplated within a reasonable time. There will always be some farmers who will not feel that they are able financially to undertake this work when their neighbors are doing it as a part of a watershed project. To the extent that these loans make it possible for all farmers to do the necessary work on the land promptly, they will expedite watershed programs.

The second act to which I wish to refer is contained in a revision of the revenue laws. This provision, which has been urged by farmers and conservationists for many

The watershed program has made great progress throughout the nation. Since it benefits both rural and urban folks within the area, as well as those downstream, the program deserves the full and active support of everyone.

years, permits farmers and ranchers to treat expenditures for a number of soil conservation practices as current annual expenses which may be deducted from farm income in computing income taxes. This provides an added incentive for undertaking conservation measures.

In a cooperative program of this kind where the initiative must be undertaken by local or other nonfederal agencies, state laws giving authority to act are almost as important as federal legislation. In this field also great progress has been made in recent years. During the legislative sessions held in 1955, 21 states passed new or amendatory legislation to provide for local and state cooperation with the Secretary of Agriculture under the Watershed Protection and Flood Prevention Act. In 1956, six additional states passed such legislation. All of this perhaps constitutes a record for cooperative legislation of this kind and indicates the tremendous grassroots interest in this program.

In my opinion this interest will be further stimulated by the amendments passed in the 1956 session. And I look for even greater activity in state legislation during 1957.

Concern for the Future

From the standpoint of legislation and authority, both at the state and national levels, great and encouraging progress has been made.

There is encouragement also in the widespread interest which has developed in watershed programs throughout the nation, both in the city and in the country.

In spite of all this progress, I feel some concern about the future. I think that now, as never before, all of us who believe in the concept on which the small watershed programs have been based must work and fight to maintain the integrity of those programs.

We must work particularly to keep their administration in the hands of an agency which understands the close relationship between soil conservation and water conservation—a relationship so close that they are in many respects the same program.

Army Enginers to Take Over?

What disturbs me is the past and continued efforts of the Corps of Engineers of the United States Army to sabotage this program. I do not want to be unduly critical of this organization. They are great engineers. I sometimes wonder if they are not even greater lobbyists.

Never in the past have the Army Engineers paid any attention to small watersheds. Only now when the general public has become so greatly interested have they shown any interest. My interpretation of their present attitude may be wrong, but to me it appears that they are opposed to small watershed programs generally, but if we are going to have them, they insist on trying to take them over.

Engineers Oppose Program

I realize this is a serious criticism, but I believe it is justified by the record of what has happened in connection with Congressional consideration of small watershed legislation. Much of their activity against this legislation has been surreptitious. But as I have already stated, high officials of the Corps of Engineers appeared before the Committee on Agriculture in the Senate in connection with the original Watershed Protection and Flood Prevention Act. They also appeared before the Senate Committee on Public Works on the Poage Bill which later became Public Law 1018 in the 84th Congress.

In the course of these appearances, they made recommendations which, if they had been adopted, would in each case have made the legislation wholly ineffective. Some of these recommendations were adopted in the committees in both instances, although not all of them stayed in the bills. Some were taken out on the Senate floor and some in conference.

More Opposition

This opposition has not been confined to public appearances before Congressional committees. It goes on in the Bureau of the Budget and the Executive Department, and among members of Congress.

This year the Poage and other watershed bills amending the Watershed Protection and Flood Prevention Act were referred to the Committee on Agriculture in the Senate. This was the natural and proper reference, because the original watershed protection act as well as other watershed bills have been referred to that committee which has always had jurisdiction over flood prevention and watershed legislation.

However, this year the chairman of the Committee on Agriculture, on his own motion and without action by his committee, asked that the bill be re-referred to the Committee on Public Works. This was done. Such action on

the part of a committee chairman is almost unprecedented. Whether this will be a precendent for the future, I do not know. It should not be, and the matter is one which should be carefully watched by friends of watershed legislation.

I am not questioning the right of the Corps of Engineers to oppose this or any other legislation, although it is unusual for a government agency to publicly oppose an administration bill like the Watershed and Flood Protection and Flood Prevention Act.

I do not intend, however, to complain of that fact or of the fact that there is opposition. I wish simply to point out that the Corps of Engineers has given sufficient evidence of its intention to destroy the watershed program if possible. All who favor watershed legislation must take notice and must be prepared to fight for the program in future sessions of Congress.

And the danger is not alone in Congress. Efforts will undoubtedly continue to be made by the Corps of Engineers to influence the Bureau of the Budget and the White House on this matter. We must not for one moment discount the effectiveness of this organization in the field of lobbying. In my opinion it has no equal in this field.

In the last session the President sent a message to Congress on the subject of a national water resources policy. No action was taken. The subject is a very controversial one and undoubtedly will be submitted to the next Congress in some form or another.

I think a national water resources policy is important. A policy which is fair to all of our people and which recognizes all aspects of our water problem should be adopted.

But the submission of any over-all water resources legislation to Congress would open the door wide for the type of logrolling and lobbying practices in which the Corps of Engineers is so adept. We must be on our guard against that possibility.

Everyone Needs to Help

I believe that the great majority of the people of this country are enthusiastically behind the watershed program. But most of them are not aware of the fight which is being waged against it, both above and below the table.

I know the Soil Conservation Society of America is not a lobbying organization, but it is composed of men and women who love the land, who passionately believe in conservation, and who realize that soil and water conservation are problems which go together and which must be planned and carried out as one program.

I am sure that as conservation-minded American citizens all of us can and will find some way to make our views known if our present conservation program is endangered by unwise legislative proposals.

Upstream flood water retarding structures can do a big part of the flood prevention job with a minimum expense. Of course, they need to be coupled with good land use practices and, in some cases, with major flood control structures downstream. Green Creek watershed near Dublin, Texas.

S.C.S. Photo

Thwarting Erosion in the High Pyrenees of France

JOHN M. FENLEY

In areas of the world where population is heavier and natural resources are relatively fewer, these resources take on added importance. People in such areas often go to great lengths to protect and conserve the scarce natural resources—which may be no more than space in which to have a home. This was the case in the Pyrenees Mountains of France. In this article, the author describes some unusual but successful means of controlling erosion.

NOWHERE in Europe are the people more conscious of their natural resources than they are in France. In each department (similar to a state) agricultural practices especially suited to local conditions have been developed. Conserving resources to a Frenchman, no matter what his status in life may be, is part of him. It comes to him in early training and observation, and by the time he reaches maturity and assumes his place in society, he thinks little else: it is his second nature.

Certainly the problem confronting Pyrenees people is not from misuse or negligence in their farming practices. Pyrenean farmers are real men of the soil, who work long hard hours tilling a few hectares each, to eke out simple lives. Topsoil to these scions of Mother Earth is the basic resource.

Their constant fear is the complete ruination of farms and homes, coming from the beautiful but treacherous mountains so near at hand.

Hazardous living through the centuries, always at the mercy of the overshadowing peaks, has given impetus to the formulation of many down-to-earth conservation measures. Every square meter is jealously guarded against erosion.

Crossing the Continent in an east-west direction from the Bay of Biscay of the Atlantic Ocean to Lions Gulf of the Mediterranean, the Pyrenees system of mountain ranges cuts off the Iberian Peninsula from the rest of Europe. In olden days the mountains made such an effective barrier that little intercourse by land means was possible between Spain and France. This allowed the unique but independent racial cultures of Andorra and of the Basque Country to develop.

A book could be written on the unusual means of guarding and preserving land in the Pyrenees. To me, the three unique and most ingenious examples of forest engineering to be seen in the Pyrenees are (1) taming of avalanches, (2) control of mountain torrents, and (3) stopping falling rocks.

In high ranges such as the Pyrenees, the avalanche is a continuous but unpredictable menace. Plunging down a steep hillside with the rumble of thunder, an avalanche will carry with it tons of snow and ice, together with a mixture of soil, rocks, and trees. Once in movement the avalanche sweeps everything in its path, rushes downward at lightning speed, and piles up in the canyon below. Sometimes whole villages have been smothered in one short fearful moment.

As storms deposit snow, it packs down into layers of different thicknesses and densities. Layers differ noticeably in hardness, and temperatures may vary several degrees between adjoining strata. Freezing and thawing action, together with the amount of melting the snow undergoes, will leave some layers as hard, solid, crusted ice; while others are soft, porous and granular, capable of withstanding little pressure.

As weights shift due to settling, creeping takes place in the snow mantle, usually between layers that differ most in density and hardness. Rate of creeping depends on variability of the weather, and is sharply affected by the steepness of slope and depth of snow. Sudden movements may be caused by unusual sounds or vibrations. A common precautionary practice of experienced mountain guides is to warn members of their parties to remain silent when crossing certain areas where masses of snow are known to be perched above. Wind movement or rapid changes in air temperatures may also make conditions hazardous.

However movement may be started, chances are it will stop as quickly as it began. But occasionally the snow mass will continue downward, gathering more weight as its speed increases.

As a young avalanche flexes its muscles, whole layers of ice and packed snow lose their structure and rigidity, and join the rush. As the entire snow pack begins to slip, the avalanche picks up soil particles and plant duff. Its speed accelerates and it gouges out larger soil material, means of control would be a series of rock masonry dams, one above the other, across the canyon bottom.

Construction of the dams was begun in the summer of 1896 and continued until 1906 when the twenty-first dam

rocks, and vegetation, churning them together with snow. Its great weight and energy may snap off large trees as though they were matches, adding them to the already overpowering force.

In sparsely inhabited sections, loss of life and property may be scant, but when an avalanche hits a community or a town, hundreds may be killed and a terrible wreckage of homes and property may result.

Such were the prospects for Bareges, a small health and winter resort town in the valley of the upper Adous River high in the Pyrenees.

Built around Bareges' mineral springs were many catering hotels and a large hospital, all doing thriving business. But the cluster of buildings formed a target for an avalanche every now and then. Eventually tourist trade dropped off alarmingly; merchants and townspeople alike knew that unless some means of control were found, the avalanches would literally destroy them.

Avalanche Control

At this point the city of Bareges called in engineers of the French Waters and Forest Service, one of the oldest conservation agencies in the world. These experienced engineers knew that avalanche control is a mateer of prevention. Instead of wasting their time at the canyon bottom, the engineers went to the source of avalanches, high above Bareges.

Here on bleak ridges and windswept canyons, they erected snow retaining walls to reduce movement. Dozens were built up to the summit, alternately spaced row above row.

Walls are generally 50 to 75 feet long, four to six feet high above ground level, and firmly anchored to bedrock. Built according to dry masonry specifications, (no mortar between the rocks) the walls allow seepage. So no small pools of water form above them. The dry walls last indefinitely without damage from thaws and freezes that pry mortared rocks apart.

Walls reduce soil and rock movement, which is the most destructive component of snowslides. Movement of the upper light fluffy snow is intercepted by a heavy gauge wire netting fence, extending 10 to 12 feet above the wall and fastened to iron rails imbedded in the wall.

Each wall and its fence hold layers of would-be avalanche material firmly in place against the hillside.

As a further measure to prevent avalanche formation, the French foresters set out thousands of tree seedlings on the sides of the steep canyons above Bareges. Within a few years the rapid growth of trees had helped stabilize the entire watershed.

Control of Mountain Torrents

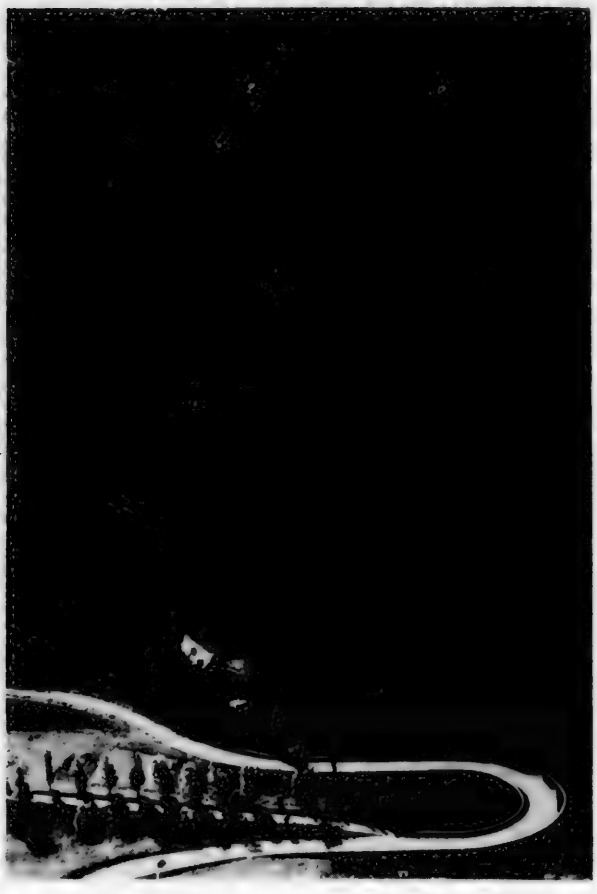
Situated high above the city of Cauterets, in the Department of Hautes Pyrenees, is the Canyon of Lizey. Cauterets is in a main Pyrenean valley joined a short distance above town by Lizey. For many decades floods spewing forth from the canyon were a constant threat during the rainy season and during snow melt.

Lizey is not large as canyons go, but it is steep and precipitous, its slides unstable and raw. Forest engineers conducted a survey of this small watershed in the early 1890's. Survey maps revealed that the most feasible

Structures such as these protect the people of Bareges from avalanches. The wall prevents slippage of soil and duff, while the netting holds the high, fluffy snow in place.

When the resort town of Bareges was developed, there were many raw canyons draining into the valley. Tons of rock and gravel fell and piled up as shown in the lower right hand corner of this picture.

A short 10 years after forest trees were set out, the once bare canyons above Bareges were covered with young saplings. Timber species planted were Scotch pine and Norway spruce, which give yearlong protection to the unstable soil.



was completed. As stone found in the canyon was not suitable for construction purposes, workmen built lateral trails out from the canyon and established quarries in hard granite out-crops. Two dams were erected per year, each reflecting the intricate and painstaking effort characteristic of the period in which they were built.

Blocks were cut in the quarries and moved by hand to the canyon. Skilled stonemasons fitted them together so carefully that mortar was necessary only at the top or spillway of each dam. For stability and permanence, dams were securely embedded to underlying rock strata. On the average, the exposed portion of each dam measures about 100 feet across, is 25 to 30 feet high, and about four feet wide at the top, increasing in thickness toward the bottom.

Dams are spaced so that the top of one is somewhat lower than the foot of the one above. This serves to break the steep pitch of the canyon channel into short gently sloping segments. Water pours over each dam into a rock pile, flows at reduced speed to the next dam, drops again, and so is lowered to the mouth of the canyon.

Before conservation measures were installed, water rushed down the jagged canyon, heavily silt-laden, and carrying or rolling tons of sand, gravel, rock, and flood debris. After the completion of the well-planned series of dams, clear water leaves the channel, usable for domestic purposes and for irrigation.

How to Stop Falling Rocks

Another unusual conservation measure to be seen at Cauterets is the ingenious manner in which the French keep rocks high up on the hillside instead of bouncing through the front yards.

Joining Cauterets Valley from the south is a tiny but treacherous watershed, Rock Canyon. Having walls nearly vertical, in places actually overhanging, Rock Canyon lived up to its name frequently by dropping an avalanche of rock into the resort town. Each occurrence

killed many people, smashed buildings, and rendered farm lands unusable. It is easy to understand the awesome respect Rock Canyon commanded in those early days.

The first attempt at control was a rock-carrying canal. Built up into Rock Canyon, the canal or causeway intercepted rolling and tumbling rocks soon after they broke loose and diverted them into the main channel above town. Unfortunately, diversion of the rocks was only partially successful. Big bouncing boulders sometimes jumped out of the canal and crashed into town.

Later a more positive control was planned to keep the rocks in place. Retaining walls were built around, under, over and between rocks. One of the strangest methods ever devised to retard natural erosion processes, the walls firmly anchor huge rocks and boulders to the hillsides in whatever position they were found.

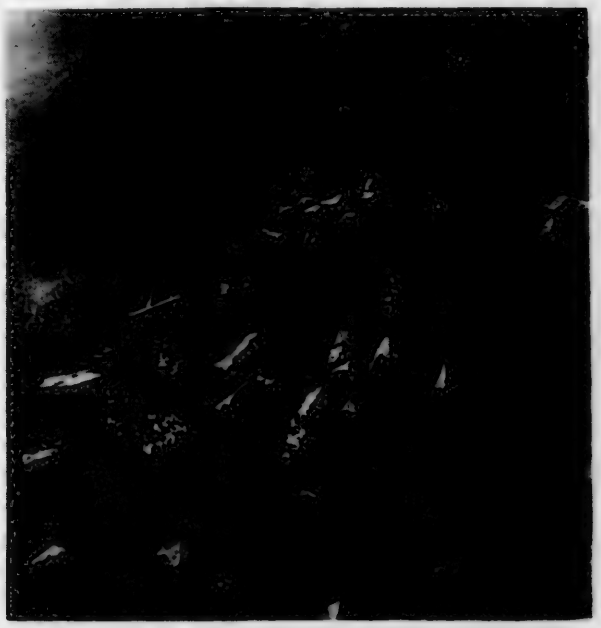
Infinitely careful hand labor went into construction for the workers knew full well the protection of their homes and farm lands depended on how effective the walls were in holding the rocks.

The last retaining wall was completed shortly after the turn of the century. Since that time no large sized rocks have broken loose. Cauterets inhabitants have all but forgotten the presence of rocks almost overhead. But not the Waters and Forest Service. Engineers make periodic visits up into Rock Canyon for the purpose of inspecting and maintaining the walls.

I must admit that many of the erosion control measures I saw the French employ in the High Pyrenees were more than surprising. Yet, even French children accepted them as quite normal, and often expressed bewilderment that anyone from America would find them unexpected.

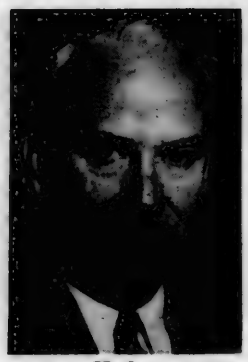
This rock canal was built to channel rocks and boulders when they broke loose from the canyons above. Large boulders bounced out, however, and caused heavy damage.

Rock masonry walls built under, over and around rocks and boulders, which jut out of the vertical cliff, are one of the most unique methods of thwarting natural erosion ever devised.



Baur

Dykes


Hedge

McConkey

Price

Fellows and Honorary

Seven men were elected as Fellows of the Soil Conservation Society of America. This honor goes to members professionally engaged in practicing, investigating or teaching soil and water conservation.

Fellows

***Arnold J. Baur**, Ithaca, New York.* Professor of Agronomy, Cornell University, and correlator under the National Cooperative Soil Surveys for the northeastern states. A native of Michigan, he graduated from Michigan State College in 1930. He obtained a doctorate in soils and plant physiology from Cornell University in 1933. Prior to receiving his degree, he worked as a soil surveyor with the Michigan Department of Conservation and Cornell Agricultural Experiment Station. He joined the Soil Erosion Control Service in 1934. This agency later became the Soil Conservation Service and he has progressed to his present position. Mr. Baur has creatively served the Soil Conservation Society of America. He is a charter member and has held the chairmanship of the Empire State Chapter as well as other positions. He has contributed to the JOURNAL OF SOIL AND WATER CONSERVATION. His most outstanding contribution was in the preparation of the *Glossary of Soil and Water Conservation,* published in the JOURNAL, Volume 7, Numbers 1, 2 and 3, 1952. Arnold J. Baur served as chairman of the committee that prepared the *Glossary* and made the final assembly and compilations.

***J. C. Dykes**, Washington, D. C.* Assistant administrator of the Soil Conservation Service, Mr. Dykes has been closely identified with the growth of the soil and water conservation program since 1935. Born near Dallas, Texas, he received his B.S. degree in agricultural engineering at Texas A. & M. College. He taught vocational agriculture for eight years and then joined the staff of Texas A. & M. College as professor of agricultural education until joining the Soil Conservation Service in 1935. Stationed at Fort Worth as assistant regional conservator for a period, he went to Washington, D. C., in 1942, and is now in charge of field services for his agency. Mr. Dykes was active in the formation of the Soil Conservation Society of America, of which he is a charter member, former member of its national council, serves on several national committees and is active in the Washington, D. C., Chapter.

***Alfred M. Hedge**, Washington, D. C.* Currently serving as chairman of the Society's Committee on Technical Standards, Hedge has been active in the organization since joining as a charter member. A graduate of the Ohio State University, he was a county agricultural agent in Ohio. In this capacity he received national recognition by the National Fertilizer Association as the county agent having the best county soil improvement program. He joined the United States Department of Agriculture in 1935 and served as chief of the Planning and Acquisition Division for the Land Utilization Program in the Lake States. In his capacity he was responsible for studies of submarginal land in eight states. He served with the Soil Conservation Service in Milwaukee, Wisconsin, and transferred to Washington, D. C., in 1945. He has had responsibility for the policies, procedures and techniques of farm and ranch planning throughout the Soil Conservation Service. He is chief of the Farm and Ranch Planning Branch. He has been a frequent contributor to the JOURNAL OF SOIL AND WATER CONSERVATION.

***Oswald Murray McConkey**, Guelph, Ontario, Canada.* The career of this great conservationist, if it could be fully related, would be of great interest to aspiring agricultural technicians. From a boyhood on an Ontario farm to international renown as a scientist and soil conservation advocate he was, in turn, to: homestead in barren wheat country of Alberta . . . graduate from Ontario Agricultural College . . . serve in France during World War I . . . attend Oxford University in England . . . work again in the western provinces . . . obtain a master's degree from the University of Illinois . . . study in many European countries, including Russia . . . become a professor of field husbandry at O.A.C. . . . receive his Ph.D. from Cambridge University in England . . . develop and improve the grasslands of Canada from selections of grasses and legumes collected by him . . . serve as staff officer with S.H.A.E.F. during World War II . . . develop agriculture and forestry education programs for the Canadian Army, participate in food and agricultural rehabilitation work in Holland and Germany . . . serve with U.N.R.R.A. in Manchuria and China . . . study agricultural problems in Indo-China, India, Greece, Africa, Europe . . . publish hundreds of reports and articles of his studies and observations . . . champion the cause of conservation in Canada . . . publish *Conservation In Canada* . . . encourage the establishment of Ontario Chapter S.C.S.A. . . . attend seven of the national meetings and serve as chairman of the Society's Committee on International Relations.

***J. H. Price**, Phoenix, Arizona.* Following his graduation from the University of California in 1913, he worked as an engineer in Panama, headed his own business firm and served in World War I. Although retired since 1953, Mr. Price is currently active in watershed development planning and work for a local watershed in Arizona. Prior to retirement he had served the United States Forest Service since 1920. In 1935 he became regional forester, North Central Region, with offices at Milwaukee, Wisconsin. During his period of leadership in the region, 330,000 acres of forestry plantings were made, timber production from national forests under his supervision increased and the area of state and private forests under fire protection increased 20 percent. The associates of Mr. Price say he has two great abilities which have been used to advance soil and water conservation: (1) the ability to reduce

Rhodes

Sackrider

Andersen

Fuqua

Whitten

Members for 1956

Honorary Membership in the Soil Conservation Society of America—for outstanding contributions in the field of soil and water conservation—was granted to three individuals.

a complex situation and circumstance into simple terms so that all concerned may clearly view the job, and (2) the ability to lead men through cooperative and team effort so many forces unite for the single, big cause. Mr. Price is past chairman of the Milwaukee Chapter, SCSA, and was active in getting it started.

Harold M. Rhodes, Morgantown, West Virginia. One of the Society's most loyal and devoted members, he has served as national membership chairman for three years. He is a charter member of the West Virginia Chapter and the parent organization. Rhodes graduated with honors from West Virginia Wesleyan College. After leaving school he worked as an engineer with several private companies before joining the Soil Erosion Service in 1934. This agency later became the Soil Conservation Service and he progressed through the ranks. While a zone technician at Upper Darby, Pennsylvania, he developed an engineering technical guide that has been adopted in most states. He also helped perfect a reporting and record system accepted nationally by the Soil Conservation Service. Later as assistant state conservationist in West Virginia, and at the request of the State Soil Conservation Committee, he developed an equipment record system for that group that has been recognized by a resolution commending him for his work. He is presently state conservation engineer for West Virginia. He and has family are active in their home community, their church, and in maintaining a fine country home.

Everett C. Sackrider, East Lansing, Michigan. A native son of Michigan, he has been state conservationist for the Soil Conservation Service since 1942. Following his graduation from Michigan State College in 1921, he served successively as an instructor of vocational agriculture, census supervisor, county agricultural agent and Michigan State College extension specialist in soils. He joined the Soil Conservation Service in 1935 and became the first project manager for that agency in Michigan. He later served as state coordinator until assuming his present position. As a member of the Society he has been active in the Michigan Chapter and on national committees. During the long period of public service in Michigan he has become known as "Mr. Soil Conservation." He has been largely responsible for the high degree of harmony and efficiency of operation among the various federal and state agencies in Michigan.

Honorary Members

H. Carl Andersen, Tyler, Minnesota. While his address is listed as Tyler, Minnesota, H. Carl Andersen has represented the 7th Congressional District of Minnesota in the House of Representatives, Congress of the United States, since 1939. He has long been interested in soil and water conservation, both as a farmer and as a member of Congress. He is one of the few actual farmers in Congress today. He is ranking minority member of the Subcommittee on Agricultural Appropriations and served as chairman of that group in the 83rd Congress. During that session, he initiated the Anderson-Hope Pilot Watershed Protection and Flood Prevention program. He was the first member of Congress to propose enactment of a "Soil Bank" program and introduced bills to authorize the program in both the 83rd and 84th Congresses.

Nolen J. Fuqua, Duncan, Oklahoma. Mr. Fuqua is one of the world's leading advocates of soil conservation today. He has reached this position of leadership without leaving the community of his birth, Duncan, Oklahoma. He was elected president of the National Association of Soil Conservation Districts during 1955 and re-elected for the year 1956. Mr. Fuqua owns farm land in Stephens County, Oklahoma, and has maintained an excellent soil conservation program on his land. His record in the soil conservation district movement is long and impressive. First he assisted in getting the state soil conservation district law passed in his native state. He has served on the board of the Stephens County Soil Conservation District since June, 1938. One of the organizers and president of the Oklahoma State Association of Soil Conservation Districts for nine years, he attended the 1947 Chicago organizational meeting of the national association. A graduate of the University of Oklahoma, he has served his local community in many ways: Chamber of Commerce, Rotary Club, City Park Board, Boy Scouts, Oklahoma Medical Research Foundation and many others. In 1955 he was the keynote speaker at the Society's 10th annual meeting.

Jamie L. Whitten, Charlestown, Mississippi. Congressman Jamie L. Whitten has been a champion of soil conservation since his days as a 4-H Club member in the hill section of northern Mississippi. A member of Congress since 1941, he has been a member of the Appropriations Committee of the House of Representatives since 1943. He served as chairman of the subcommittee handling agriculture appropriations from 1949 to 1953 and again in the 84th Congress. He has been an active supporter of the watershed program and is fully appreciative of the agricultural phases of flood prevention. Congressman Whitten has championed the agricultural conservation program to share conservation costs. At the same time he has encouraged efficiency on the part of each individual agency in handling its program. He has worked conscientiously to see that a dollar's worth of conservation is returned for each conservation dollar appropriated. The Honorable Clarence Cannon, who serves as chairman of the Appropriations Committee of the House of Representatives, has stated in part: "Mr. Whitten is probably one of the best informed men on agricultural legislation, and especially on agricultural appropriations, in the country today."

Land Use Changes Linked to Highways

FRANK W. SUGGITT

Frank W. Suggitt

Land hogs—that's what those new highways are. Sure they take up a lot of land for rights-of-way. But that's only a beginning. More and faster highways spread city influence over a wider area. And with this influence comes small business and residential development gobbling up far more land than the highway itself. We don't want to give up highways. But it seems wise to give more direction to growth of these other highway influences.

THERE IS INEVITABLE pressure upon farmland as urban and suburban population and demand for space continue to expand. By more fully understanding the nature of the pressure upon farmland, the situation can be met objectively as a phenomenon of the times, rather than with an emotional approach which is tied to the conventions of a quarter of a century ago.

A major assumption of this paper is that exogenous, or "off-the-farm," forces are exerting greater influences upon "on-the-farm" managerial decisions than are those factors which are under the exclusive control of the farm operator.

First on the list of these exogenous forces is the continued dominance of urban and urban-related populations, as they affect rural land values, land uses, and the opportunity for off-the-farm employment.

Closely associated are the influences of greatly improved highways which make vast areas of rural land economically desirable for urban-like uses. In this connection, it is interesting to note that the new 40,000-mile federal-aid highway program entails the construction of 33,000 miles of new, four-lane, limited access highways. Most of this will be on rights-of-way yet to be acquired. These highways will consume approximately 1,815,000 acres. That is equal to more than 11,000 farms of 160 acres each. *Yet the greatest land use change resulting from these highways will be to render remote*

Frank W. Suggitt, an SCSA member, is head of the Resource Development Department, Michigan State University, East Lansing, Michigan. *This paper was presented as part of the Symposium on Land Utilization in the United States at the annual meeting of the Soil Conservation Society of America, Tulsa, Oklahoma, October 17, 1956.*

Photo by Michigan State Highway Department

Extending far out into farming areas, urban influences follow the transportation arteries. Both highways and new developments eat into the total of available farm land.

Photo by California Division of Highways

Urban expressways bring wider areas within commuting range of the metropolitan "downtown." So satellite suburban settlements and massive shopping centers soon spring up along the new travel routes.

farming areas accessible for commuters, industrial development and other nonfarm uses.

Decisions on the part of industrialists and of the government to decentralize and disperse industry can also shatter the existing pattern of land values, land uses and employment characteristics far from a major city.

Finally, brief mention must be made of off-the-farm policy decisions as they pertain to production allotments, acreage reserves, subsidy and credit policies, reclamation, tariff, freight rates and so on. These have profound effects upon agricultural land use and managerial decisions.

Changes in land use, for the most part, are characterized by changes in the intensity of use. The two obvious directions of use-intensity changes are represented (1) by reversion of cropland to extensive grazing, forest or recreation on the one hand, and (2) by conversion of land to more intensive agricultural uses or to urban-type uses characterized by a higher population density.

During the past 15 years, 17 million acres, or about 5 percent of the nation's total cropland, has been converted to other uses. Of this total, about three-fifths has gone into private nonfarm developments and the other two-fifths into public nonfarm uses. This means that since 1942 the equivalent of 135,000 average farms and ranches have been converted to residential, commercial and industrial uses and 90,000 farms and ranches have been absorbed by highways, airports, parks and other public uses.

Once farmland is converted to urban and urban-related uses, it is forever lost to agriculture, no matter how badly it may be needed in future years.

It is necessary that we understand the basis for land use changes.

The most obvious explanation for an intensification of land utilization is the growth of population and the increasing demand for food, fiber and space. In simple terms, there were about 11 times more people per square mile in 1950 than in 1790, and the population density has doubled just since 1900.

The number of acres of cropland per person has been halved during the first half of this century. Yet improved technology in agriculture has permitted more people to be fed better from only a slightly larger acreage, with a substantial stockpile of farm products left over. How long this can continue is beyond the scope of this paper, although there is every indication that surplus rather than inadequate food supplies will be the most trying agricultural problem for at least the next two decades.

Basic Population Changes

Conversion of farmland to other uses would be relatively slight and easily contained if total population growth were the only factor involved. Actually, the demand placed upon land for nonfarm uses is compounded by basic changes in the characteristics and habits of our population.

By 1900 when the western frontier was virtually gone, farm population stood at an all-time high. And cities were absorbing surplus farm youth at a rapid rate as the Industrial Revolution gained momentum. Cities were forced to expand and annex rural territory as the farm-to-city migration continued and as the demand for fabricated products soared. Since the turn of the century mechanization in agriculture has continued to force farm workers into nonfarm employment at a rapid rate.

However, it was not until the advent of almost universal ownership of automobiles that the growth of the nonfarm population exerted its greatest influence upon

With adequate highway facilities, "one-story" industries often move to rural areas. This adds to the total land lost forever to agriculture.

Photo by Michigan State Highway Department

rural land use. To be sure, mass transportation, especially in the form of commuter trains, left an indelible mark upon former farm areas by causing satellite communities to develop as "bedroom appendages" to the larger urban centers.

The automobile has freed the urban worker from living within walking or streetcar distance of his job. In a survey of 18,000 people buying new cars in 1954, 88 percent said that they use their cars as a regular means of getting to and from work. Of all automobile trips made in the Detroit metropolitan area on a typical weekday in 1953, two-thirds of the trips were for the purpose of traveling to home or to work.

Industries Move Out

The fact that Los Angeles has only 2.6 persons per passenger car (the lowest ratio of any major metropolitan county), accounts both for the sprawling nature of the urban development and for the acute traffic congestion in that area. In contrast, in the five burroughs which comprise New York City, where multi-family dwellings predominate, there are 6.5 persons per passenger car.

The modern metropolitan type of development would not have occurred in its horizontal form had it not been for the automobile. By the same token, failure to provide for efficient use of automobiles in these same metropolitan areas is a major factor in accelerating the decentralization of industry, commerce, recreation and residence into the rural hinterland. As traffic congestion and land values rise due to mounting densities in the older parts of the cities, both industrialists and workers welcome the opportunity to locate in a rural community. Increasing mobility of the population, along with shorter working hours and more income, encourages workers to look further and further from their place of employment for residential and recreational space.

More than half the population of the United States resides within the 168 standard metropolitan areas. Over 97 percent of the nation's increase in population between 1950 and 1955 took place in these metropolitan areas.

Three phases of metropolitan and urban growth are of interest from the point of view of land utilization.

1. First, is the territorial expansion of the older central cities. In 1955, according to the International City Managers Association, 526 American cities annexed nearly 223,000 acres for an all-time high. Thus the equivalent of 1,400 farms of 160 acres each passed from rural to city administration in the past year. Yet annexation of densely populated areas contiguous to cities has not progressed nearly as rapidly as principles of planning, administration and economics would indicate. And the failure on the part of cities to absorb their suburban offspring has added to scattered subdivision formation and aggravated the fiscal problems of units of rural government.

2. A second and more startling aspect of metropolitan growth is suburbanization. The suburban portions of the 168 standard metropolitan areas comprised 42 percent of the total metropolitan population in 1950, and accounted for 61 percent of the metropolitan growth between 1940 and 1950. In the next 20 years, 61 percent of the total population increase will settle in the suburbs, to continue the trend of the past 15 years. The only place for these haphazard suburban areas to expand is outward from the cities. Farms in the path of this pressure must yield to more intensive uses. The farm surrounded by suburban development faces a tragic future.

3. The third phase of population growth, less obvious

and less spectacular than metropolitan and suburban expansion, is the continued dispersion of rural nonfarm residents throughout rural farm territory. This, like suburban swelling, is the direct result of improved transportation and mechanization which have distinguished the trends of the middle third of the Twentieth Century.

With improved agricultural technology, it has been necessary for some farmers to expand the scale of their operations while others become "week-end and evening" farmers and commute, over good highways, to urban-based employment. Farm homes which remain in the wake of farm unit consolidation are occupied by people with stronger economic ties to the city than to the country.

City Influence Widens

At the same time, city workers are able to leap across the tangle and turmoil of city and suburban living and can establish new homesites in what was previously a rural agricultural area. At former crossroad trading centers, new homes and commercial establishments are forming the nucleus for new, scattered, suburban-type developments.

With present highway facilities, no farming area within 50 miles of an expanding nonfarm employment base is immune from this dispersed, checkerboard, leap frogging type of development. As highway facilities are improved and time en route is reduced, the circumference of city influence upon rural areas will widen.

The growth in the importance of recreation in America closely parallels the transition from a "muscle" to a "machine" economy. It is a counterpart of the shift from rural agricultural to nonfarm industrial society. Just as the increase in leisure time, disposable income and improved transportation have brought about residential, industrial and commercial pressure upon rural land, they have also increased the desire and ability to partake of more recreational opportunities.

Extensive areas are being acquired in the proximity of metropolitan areas for parks, playgrounds, water sports, hunting, fishing, field trials, nature study and the like. These kinds of recreational land uses, within 50 or 60 miles of a sizeable city, can command higher prices at the market place than most agricultural land. The demand for close-in recreational lands is far ahead of the present supply, and it is only a matter of time before huge sums will be made available to provide for this much-needed relief valve in our high-pressure system.

More remote recreational areas are in ever-increasing demand for more extensive uses such as hunting, fishing, sight-seeing and wilderness-type pastimes. Fortunately most of the latter demands are not in competition with agricultural land use. In fact, these kinds of recreational development augment adjacent farming areas by providing new employment opportunities for surplus farm youth, new market outlets for agricultural products, and new sources of taxable property to share in the costs of local government.

The changing occupational and residential pattern of America's expanding economy continues to be reflected in land use conflicts and in administrative processes which are far behind the rate of environmental changes.

In 1950, farm people comprised 13.5 percent of the nation's population, but in 1975 it will be reduced to about 6.8 percent of the total. Total population will in-

New highways are soon lined with "shoestring" commercial and residential developments. This adds to the total land loss. Limited access and zoning provisions on some new highways prevent this extra loss.

Photo by Michigan State Highway Department

crease by 38 percent, yet 85 percent of the increase will take place in the suburbs and only 15 percent in the central cities. *The living pattern of the American people is undergoing a basic change, yet there is little evidence that adequate steps are being taken to smooth the transition and reduce the conflicts and contradictions.*

The era of automation, whereby man's labor productivity is increased by the substitution of electronic impulses for thought processes, promises to be even more revolutionary than was the substitution of mechanical power for muscle power. This will be reflected in even more leisure time and disposable income which will accelerate the trend toward suburban and rural residence and recreation. The development of atomic and solar power promises the possibility of freeing industry from conventional sources of power and will permit industrial decentralization and development virtually any place. New systems of rapid mass transit must be devised to combat current vehicular congestion and this can hasten the suburban encroachment upon the rural hinterland.

Transition Presents Opportunities

These trends and possibilities present opportunities and obstacles to the nation's agricultural industry. Expanding population and significant shifts in income distribution and consumption habits assure an increasing demand for the products of agricultural land. Dispersion of industrial and service establishments and enhancement of recreational land use can hasten the transfer of underemployed and under-capitalized farm people and farm lands to more productive employment. Realization of this fact should result in public programs which will speed up the transition rather to futilely attempt to impede the enevitable.

Renewed energy must be given to land use planning activities, especially in tension areas. More complete land and water inventories and studies are needed to guide communities, highway planners, industrialists, land developers and public agencies.

Save Good Farm Land

Every effort should be made to direct nonfarm uses of land to sites that are less favorable for farming. Yet it should be borne in mind that it might be more economical and socially more desirable to reclaim new farmland in areas more remote from urban and recreational pressure.

New administrative and fiscal arrangements are necessary to assure continuation of farming in tension areas where it is socially desirable to maintain agriculture. New systems of zoning, taxation, subdivision regulations and direct subsidy will have to be devised if agricultural lands are to resist urban encroachment within the wide orbit of urban influence. The only alternative to such subsidy is to vastly increase the intensity of agricultural land use in such areas so that agriculture can outbid the price offered by pressing nonfarm uses.

Rates, directions and character of urban advance must be plotted so that plans can be cooperatively developed whereby the advance can be so directed as to utilize land and water resources most advantageously, with the minimum of sacrifices and hardship. Only then will it be possible to delineate an area and dedicate it for agricultural use, and to focus every available means upon increasing the productivity and profit of that use. Only then can a farm planner, an extension agent, a vocational agriculture teacher or a credit representative know that his energies will not be wasted by the subdivision of a farm the day after he finishes giving assistance on that farm.

These service personnel can be key leaders in the development of the necessary land use plans and dedications of land use. They possess the combination of technical skill and grassroots cooperative leadership which it vitally needed. Their energies, coupled with those of other agencies, organizations and units of government can resolve order out of the chaos and speculative panic which enshrouds every urban center and extends far out into the rural hinterland. *They, above all others, must be encouraged to better understand the basic changes in America's employment and occupance pattern and to better appreciate major regional shifts in population and land use.*

Integrated Plans Needed

Armed with this kind of knowledge, local people in local areas must develop plans for the direction of land use changes. These local plans must be integrated with one another into broader area plans which are sufficiently comprehensive that they can give positive guidance to new land use developments.

There is no greater challenge before the Soil Conservation Society of America.

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The Human Side of Watershed Programs

E. J. NIEDERFRANK AND WENDELL R. TASCHER

A watershed program moves only as fast as the people involved are ready to move. Often, these people have diverse interests and backgrounds. Approached in the wrong way, it may become impossible to form them into a working organization. The authors outline certain principles of human behavior which must be taken into account.

INTEREST in soil and water conservation continues on the upswing. The watershed program is adding a new highly significant phase to this trend.

During the last two years local people in about 1,000 watersheds have expressed interest in undertaking a watershed project. As of October 1, 1956, 31 watershed projects have been approved for operations under Public Law 566 (a watershed protection and flood prevention act).

The watershed program adds "organization" and "community of interest" factors to soil and water conservation work. Neither of these has been greatly needed in dealing with specific conservation practices on individual farms and ranches.

Furthermore, new legislation amending PL 566 broadens this community of interests still more. Other social values related to watershed programs may now be considered, such at town water supplies, recreation, and wildlife.

These new organization and community interest factors bring greater need for emphasis on people and human affairs in conservation work. This was forcibly brought

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Watershed programs may require the uniting of several separate interests. Both town and country interests are vitally affected by the watershed in this Pennsylvania county.

home recently by the experiences in the "pilot" projects authorized by Congress in 1953. In some of these cases successful watershed organizations have been developed. In other cases organization has been hard to achieve or hard to maintain, yet is needed as much as in the first cases.

What made the differences in these cases? The soil, forest cover, slopes, rainfall, and drainage are generally the same. Similar procedures had been used in promoting and forming the watershed organizations. *The differences were in the human resources—the people.*

Yet in most of these cases the people were good folks with plenty of quality leadership among them. The real reason for the varying success of watershed organization was this: *Differences in thinking, social values and patterns of human relations had not been taken into account in some cases as well as in others.*

For example, one pilot watershed report had this to say: "The district supervisors have done all they could do to encourage local participation, but the fact still remains that the farmers in the watershed are not well enough informed or sufficiently concerned to adopt the recommended program at a faster rate. . . . It is not a matter of insufficient or incapable personnel as far as technology goes, for they are hard working and conscientious . . . we just cannot move faster than the people are ready."

Consider Differences in People

Take another case, which was a request for discontinuance of work: "The principal reason the board of supervisors adopted such a resolution was that there were very few requests coming in from farmers for technical assistance in developing and applying safe conservation plans for this part of the country. With few exceptions, farms in this area are quite small and are being operated by older farmers who are not financially able to pay their share of the costs in the application of conservation practices and are not interested in using credit to get the job done."

In another case, a watershed includes 321 operating units. Yet farmers in 253 of them are actively cooperating with the district, their farms including 86 percent of the acreage involved. It is estimated that about 70 percent of the land treatment practices have been installed on the 172 operating units for which basic conservation plans exist. Rights-of-way to the value of $77,000 have been donated by 31 landowners. Local townships have donated $3,000 for structures which eliminate bridges. The farm organizations, civic groups, bankers and farm dealers are back of the program. Various persons and groups have been in on the decision making.

Problems of watershed organization fundamentally involve work with people, rather than with trees and soil and field crops. The greatest problem is getting the people to respond in regard to land and water problems. In some cases people respond readily, in other cases only slowly or not at all.

Many human or sociological and psychological factors affect the interest of people in watershed organization.

For example, typical factors affecting group action and response are the kinds and amounts of neighborliness prevalent in the communities of the watershed. Cultural traditions of nationality and religion that predominate in the area must be considered.

Age differences and degree of advancement among farmers, along with the amount and arrangements of tenancy, also are important. It is only logical that older farmers will not want to go in debt to change patterns of farming with which they already are satisfied.

In many places the question of whether a proposed watershed crosses community or judisdictional lines and the extent of community rivalry are also major factors. Complicating this is the fact that in many places community social structure is in a state of flux, due to school consolidation and changing trade center relations.

The population picture is often made more complex by growth of suburbs, rise of local industries and movement of nonfarm people to the country.

Sources of prestige and differences in prestige between families or groups almost always have to be considered, especially in the local leadership. Who should be asked to do what, and who should do the asking?

Other factors frequently of concern in watershed organization are fear and uncertainty about what the proposals will do to present farm organization and plans,

Increased understanding by community leaders pays off in increased support. Here, a group of Nebraska 4-H club leaders get information about watershed protection.

plus the desire to rely on one's own independent action. The amount of popular community support in a project, and the suspicion of outside pressure influences, frequently need to be considered.

A major factor in many instances is the differing concerns families and communities may have in regard to watershed protection, and to the proposed plans for operation and control of the sponsoring organization. Rumors on one or more of these points spread easily and usually are hard to counteract.

The people in the floodplain of a watershed have different concerns and conservation goals than those living in the adjoining hill areas of the same watershed. The people in the urban areas have different concerns than those in the strictly rural areas.

Problems Appear at Any Stage

One or more of these problems may appear in almost any stage of watershed organization. Often things will appear to go smoothly until the matter of easements is faced. Then the real blocks, emotional or logical, may begin to appear.

In one pilot project everything went fine and all the easements for impounding water were obtained, except from one landowner who decided to hold out. No amount of persuasive discussion and analysis by an agency employee (contrary to policy) would move this absentee owner. The project appeared to be completely stalled.

Then a farmer (a soil conservation district supervisor) whom the absentee owner knew, went to see him and won him over without too much apparent difficulty. So long as the owner was dealing with the agency representative (government to him), he would not be influenced.

A real problem often arises where the farms in the upper part of a watershed are small and the easement for a floodwater detention structure will take most of their few acres in the valleys—the acres on which the farmers produce most of their farm income—while the larger operators in the basin of the watershed will get the benefit.

Under such circumstances, it is hard for the small farmers in the hills to give up, without some sort of compensation. But until they do, a watershed program may be stymied.

Many agency workers and conservation leaders have done effective work on watershed organization and other group conservation activities. Often this effective work was based on experience and good "horse" sense. So some may not appreciate the principles back of what they did and why it was successful. Yet certain basic principles of human action do ring true most of the time.

The same principles are revealed by both research and experience. And they have to be followed almost as surely as we follow the principle that water runs down hill. Some main ones are listed below:

1. There has to be general public recognition of the problem. People will be interested in a problem only as they identify it in their own minds and accept it as effecting their own goals.
   In too many cases programs are proposed and actions sought while assuming that the people already understand the problem and want a solution. Actually the problem may not be recognized, or defined, in the minds of the people.
2. People respond to programs in direct proportion to the degree they have had some part in planning what they are expected to do. Usually these first considerations are based on how it will affect them personally.
   The costs and immediate potential benefits are often what they first think about in the planning. Few people see the broader implication in the beginning.
3. People learn and accept new ideas more readily

Conservation practices on the farm are basic to the success of a watershed program. Here, a young Delaware farmer and his wife re-evaluate the conservation plan on their upland acres.

when approached through channels of communication with which they are familiar. The most influential channel is that between families and small groups. Within these units is an "informal leader" who is respected and willingly followed. This informal leader is usually quite like the rest of the group and therefore easily overlooked. Yet the great majority will only do what the local leadership and community supports. Even then they must confirm this support from their own contacts and discussions with one another.

4. Farm families do have goals (often somewhat undefined) for themselves and standards of conduct with respect to others. Quite naturally, they respond to proposals and programs only as these fit in with their goals and standards.
   One of these standards is common among rural people. They are basically fairminded and generally do not like to take advantage of other families, or even appear that they are doing so.
5. Farm families believe in organization and working together, but according to their own control. They do not want to be *put* into an organization, or to be in one that is going to be run from the outside or by a "certain element" in the community.

It is easy to see from these abbreviated principles that certain procedures would be especially important in working with people on watershed organization. Along the same line, some other possible procedures might have little or no effectiveness.

How do we know what the human resources and social situations are in given cases and, what do they mean? Do we analyze this phase of the local agriculture as well as we should? Unfortunately, the answer is, "No." But we must ever keep in mind that successful conservation work demands understanding people and socio-economic factors just as it does soil, topography and climate.

Principles Proved Sound

These principles have not been drawn out of the blue. Instead, they are based on numerous sociological researches and studies proved sound time and time again by experience.

The nature of rural locality groups and what they mean was first studied in the 1910's by such pioneer rural sociologists as Charles J. Galpin, Warren H. Wilson, and later by J. H. Kolb, Carl C. Taylor, and Dwight Sanderson. The role of cultural values, family life, prestige groups, and the nature of special interest organizations and participation of people in them have been more recently studied by Anderson, Wileden, Kaufman, Hoffer, and a host of others.

In recent years attention has also been given to leadership development, group dynamics, education methods, and evaluation of specific procedures and programs. Some excellent work along this line is reported in *How Farm People Accept New Ideas*, North Central Regional Publication No. 1, Iowa State College, Ames, Iowa.

Local Leadership Works Well

Experience and study of the community development approach, which is now widespread across the southern states, proves the existence of quality rural local leadership and the value of local group planning. Certainly the experience of the Soil Conservation Service with group participation methods, informal leadership and district organization also proves the validity of reliance upon local leadership, involvement of people in programs, and adaptation of procedures to local situations.

The group or social action process idea which embodies the aforementioned principles is fundamental in the successful promotion, organization and operation of any program. This is especially true for watershed organization. Group process is the idea of doing things with people rather than for them and to them, the idea of the *democratic philosophy of leadership* rather than authoritarian leadership, the idea of *understanding people and having faith in them*, the idea of *letting them take part in the decision making*.

Programs succeed and conservation progresses when agency workers and local supervisors believe in and are skilled in following the group process idea as they work *with* people on soil and water conservation problems.

More People Interested in Water

Today more people in the general public are more water-use conscious than ever before. This is due to various factors such as the drought over wide regions in recent years, the expansion of urban settlement and nonfarm families in the open country, new industries in towns and small cities, increase in irrigation, and the forest depletion in some sections. City water supplies, sewage disposal, increased use of water in homes, and water recreation, in addition to flood prevention and conservation, are important current factors in the water situation of many communities.

We are in a transition period in which our work moves toward uniting a community of interests. We are adding this through watershed programs to the earlier work with individual farmers and ranchers. This "community type" problem is not only more complex in terms of the human factors involved, but also in its technology and in the organization necessary for carrying out the needed watershed work as part of ongoing community programs.

(Later articles will deal with the social action process in more detail. In the meantime, comments and illustrative examples or experiences from readers will be welcomed by the authors or the editor.)

RESOURCE PRODUCTIVITY, RETURNS TO SCALE, AND FARM SIZE. Edited by Earl O. Heady, Glenn L. Johnson, and Lowell S. Hardin. *The Iowa State College Press, Ames, Iowa. 1956. 208 pages. $3.50.*

Five parts comprise this volume: I, Framework for the Problem; II, Some Historical Accomplishments; III, Some Problems and Procedures; IV, Illustrative Applications; and V, Individual and Group Values in Farm Management Analysis.

The objective of this compilation of 31 essays and discussions is to review a segment of the current thinking and research in the measurement of resource productivity in farm production. While technical relationships are given primary consideration, managerial and institutional aspects of the problem are also treated.

Although this book was written primarily for use by students, researchers, teachers, and administrators, workers in the field of farm planning and farm management will find it thought provoking and quite interesting, particularly those with mathematical background.

It is the opinion of this writer that it will do much to stimulate thinking and research in this important area.

—E. L. Sauer, *Champaign, Illinois*

FARM APPRAISAL. By William G. Murray. *The Iowa State College Press, Ames, Iowa. 366 pages.*

The author has completely revised this third edition of *Farm Appraisal.* This well-organized text culminates more than 20 years of study and teaching of farm appraisals and presents new ideas as well as clarifies accepted standards.

It is divided into three parts: I, Introduction, covering value, valuation, types of appraisal, and the appraisal process; II, Classification, including chapters on legal description, appraisal map and soil inventory, soil productivity, other factors affecting productivity, productivity ratings, crop yields, typical cropping system, building inventory, and land and farm classification; and III, Valuation, which includes 12 chapters covering the perplexing problems of converting the details of the physical data into dollar value.

The text is easy to read and understand. It has 69 illustrations, 58 tables and much usable appraisal information in the appendix. Each chapter concludes with one or more problems which serve to review and apply the materials presented in the chapter. Selected references are also given at the end of most chapters. Specific examples in the book illustrate appraisal procedures.

Conservationists will be interested in the attention the author gives the soil inventory, including soil areas and types, drainage, erosion, slope and soil productivity in the appraisal process. He recommends the use of the U. S. Department of Agriculture and State Agricultural Experiment Station soil survey system in preparing the land inventory as part of the appraisal process.

Professional agricultural workers, and particularly those interested in appraising farm real estate, will find this text an important tool in their kit.

—E. L. Sauer, *Champaign, Illinois*

THE GREAT PLAINS IN TRANSITION. By Carl Frederick Kraenzel. *University of Oklahoma Press, Norman, Okla. 428 pp., maps and charts. $5.00.*

A fresh and provocative view of the problems of the Great Plains comes from a new voice in the mounting discussion of this region's place in the nation's economy. Karl Frederick Kraenzel is professor of rural sociology at Montana State College, just on the western edge of the region as he delimits it—roughly, the semiarid zone from the 98th meridian to the Rockies.

Although he is author of journal articles and academic studies, this is his first book addressed to the general public. It comes at a most opportune time, when drought and dust have forced a new public recognition of the critical situation in that naturally dry and windy land.

But Kraenzel convincingly argues that drought and dust are not the cause of the emergency. "It is not the fact of semiaridity that causes the difficulties in the Plains, but the fact of an unadapted culture that does so."

The Plains were settled by people from forested lands who brought their humid-area attitudes, methods, and institutions with them. The agriculture and business of the Plains are still dominated by economic and political forces from outside the region. These institutions cannot cope with the extreme and unpredictable hazards of a semiarid land.

The author begins his analysis with a consideration of the physical features of the region—the climate, soils, plants, and animals. Although many of his source materials are outdated, he correctly summarizes the unique

traits of both plants and animals as "ready mobility, flexibility of habits, and capacity for reserve building." These, he concludes, are the characteristics needed for survival in this region.

Incidentally, he challenges the ecologists to give us more information on survival traits of native plants and animals of the region, soundly reasoning that such an understanding of adaptation in nature might be a useful guide to human society.

After some attention to the history of the white man's occupation of the Plains, the book concentrates on an analysis of the unique social and institutional characteristics of the area. Here are some of the original contributions of this work—vivid descriptions of features of Plains life heretofore vaguely sensed but not widely understood.

The idea of the "sutland" and "yonland" pattern of settlement, for example, will be new to most readers. The sutland is the more densely settled, often stringlike, area of habitation along the major avenues of transportation. Away from the sutland is the yonland—the area "out yonder"—generally without the major transportation avenues and the public utilities and services found in the sutland. The influences of this pattern on the social organization, on community services, and other problems of Plains life are penetratingly analyzed.

Another feature of the Great Plains is that they are a hinterland, an area set apart. Financial and governmental direction come from headquarters generally located outside the area. There are no major cities within the semiarid Plains. Not one state university or land-grant college is located in the region; all are in the humid parts of the eastern tier of states or in the mountainous parts of the western tier. These and other aspects of the situation mitigate against a realistic understanding and treatment of Plains problems.

Despite the unique physical features of the Great Plains region, its population has no unified character. Rather, it consists of a number of minority groups, each with its peculiar interests and attitudes. The racial minorities includes the Indians, the Latin-Americans, the Negroes, and several white national groups. More significant are the occupational minorities—the stockmen, the dryland farmers, the irrigators, the cotton growers, and others. Kraenzel's descriptions of the separate viewpoints and motivations of these groups are vivid and realistic.

In looking to the future and attempting to suggest solutions to the Plains' problems, the author is somewhat more hazy. But who can see the future clearly? He wisely returns to the survival traits of the native plants and animals—reserves, flexibility, and mobility. "These traits need to become ingrained in all forms of activity, especially in the more vital and costly institutional patterns of the region." Some form of regionalism—particularly "administrative regionalism," whatever that is—seems to be the answer.

But it is enough that the book gives a fresh and realistic picture of some of the characteristics and problems of this vast agricultural empire. It should be required reading for conservationists and administrators concerned with the area.

—BEN OSBORN, *Arlington, Virginia*

FARM MANAGEMENT MANUAL—A GUIDE TO REORGANIZING A FARM. By T. R. HEDGES AND G. R. SITTON. *The National Press, Palo Alto, California. 133 pages (8½ x 11). Illustrated, 1956. $3.00.*

The authors state that while this *Farm Management Manual* is intended primarily for teaching farm management to college and university students, it is their hope that farm managers and other professional workers will also find it useful. It is this reviewer's opinion that those doing conservation farm planning and related work will find it particularly useful in reorganizing a farm business.

This five part manual contains a wealth of farm management principles, practical suggestions, reference tables and exercises. It applies a planning approach and proceeds, step by step, to develop the cropping and livestock systems, the inputs and resources needed, and finally the costs and returns. This approach enables the user to evaluate the efficiency of the plan and thus is an effective way to get across basic economic principles and planning procedures in farm management.

While the manual is written in a California-Oregon setting and thus is much more pertinent to the western area, its farm planning and management principles have universal application. The matter of land use according to soil capabilities and the observing of proper crop sequence (rotations) to prevent soil deterioration and erosion losses naturally will require more emphasis in the Midwest and the more humid areas.

Farm planners will find the excellent treatment of, and planning for, irrigation in the manual most helpful in coping with the problems arising from the growing interest in, and use of, supplemental irrigation.

The fundamental lessons in the sections on land use and crops, planning for livestock, planning power and equipment, and planning farm labor should aid the farm planner in helping design economically sound conservation farm plans.

The manual should receive acclaim from farm planners and those working in this general field (professional workers and farmers) as well as farm teachers and college students.

—E. L. SAUER, *Champaign, Illinois*

Field Notes

Conservation Promoted at Field Days

Conservation got a real boost at the National Field Days and Plowing Matches held near Colfax, Iowa, recently. Conservation demonstrations seen by the thousands and thousands of visitors included terracing, gully control, waterway construction, pond construction, diversion terraces, pasture renovation and many others. All the conservation work was done under SCS direction.

These pictures show two units of the wagon train stopped at a gully-filling site. At each site, visitors were

given a chance to examine a conservation practice as closely as they wished. A specialist was stationed at each site to explain the practice and its benefits.

Some estimates placed the value added to the field day farm by the conservation work done during the show at close to $100 an acre.

Team Work in Soil Conservation District

This picture is a fine example of industry cooperating with the fast-moving conservation movement in Georgia. A worthy woodland thinning practice in a stand of overstocked natural slash pine is called to the attention of the motoring public on Federal Highway 301. The 8′ x 12′

three-colored sign is located about 10 miles North of Folkston in Charlton County on a tract of woodland owned by Wade Lumber Company.

Malcolm Wade of Wade Lumber Company, a Satilla River Soil Conservation District Supervisor, teamed up with Nick Munick, forester with St. Marys Kraft, and Clinton D. Sims, local Soil Conservation Service technician, in promoting this project. St. Marys Kraft furnished and erected the sign.

—Robley N. Jobe, *Waycross, Georgia*

Fertilize Forest Areas with Airplanes

The new practice of forest fertilization has real promise, according to Rutgers University workers. Recent tests indicate that fertilizing trees can increase growth between 40 and 65 percent.

This picture shows aerial application of 400 pounds per

acre of 12-12-12 to forest areas on a Rutgers University research farm. This was probably the first airplane application of fertilizer to a forest area.

Measurements of the fertilized trees will be made after each growing season to get more data on tree response to fertilizer. The increased growth from the fertilizer may help supply the growing demand for pulpwood.

IUC Caribbean Committee

The International Union for Conservation has adopted proposals to form a special Committee for Caribbean Countries.

Initiative for the establishment and maintenance of the new IUC division was undertaken by the Mexican Institute of Renewable Natural Resources.

The IUC Caribbean Committee will concentrate on furthering effective conservation action in the Antilles, Mexico, Central America, Columbia and Venezuela. Soil erosion, deforestation and depletion of wildlife are serious problems throughout most of this area. Dr. Enrique Beltran, Director of the Mexican Institute, said the Committee would serve to promote exchange of information, improved cooperation and studies of local problems.

Staff Changes for Geological Survey

Reorganization of the Water Resources Division of the Geological Survey has been announced by Secretary of Interior Fred A. Seaton.

The move was made to integrate program planning and operations, to decentralize administration and to improve facilities for general hydrologic studies, according to Seaton.

Raymond L. Nace is now assistant chief of division for operations. Dr. Luna B. Leopold is assistant chief for program and development. Frank Barrick, Jr., is administrative officer in the office of division chief. Two new

★ ★ ★ ★ ★

Proposed Policy Statement on Watershed Management

This is a proposed statement of* Society *policy on watershed management. It was developed by the watershed management committee at the request of the national council.

In its meeting on October 13, 1956, the council directed that this proposed policy statement should be published in the* JOURNAL *in order that all members of the* Society *may have an opportunity to review it and to offer any suggestions for modification or improvement.

Any suggestions should be directed to the chairman of the watershed management committee, Carl B. Brown, Soil Conservation Service, Washington 25, D. C. All suggestions should be offered prior to March 1, 1957, so that a final draft of the policy statement may be prepared for consideration by the council at its spring meeting.

The conservation, control and beneficial use of precipitation, runoff and underground water supplies is essential to the best management of all renewable natural resources including soil, water, timber, grass and wildlife.

Watersheds and river basins are the natural geographical units for water management—the key to conservation of all renewable natural resources. The management of these resources can best be planned and carried out in watersheds of such size that the people living within them have a community of interest in their protection and improvement.

But proper recognition must be given in planning such watersheds to resource potentials of regional and national importance in large river basins. Correspondingly, river basin planning must give full recognition to developing the resource potentials of smaller watersheds within them to the end that equitable distribution of benefits may be achieved.

The proper management of renewable natural resources can best be achieved by placing the highest practicable responsibility on local people using these resources. The states should enable resource users to create, through democratic processes, local organizations capable of carrying out, operating and maintaining their resource programs.

Both the states and the federal government in proportion to state and national interests and responsibilities should provide educational, technical, financial, credit and other forms of assistance designed to permit the local-state-federal partnership of interest to build local and regional responsibility, and to effectively and rapidly achieve a condition of resource development and protection consistent with present and long-term future demands for food, fiber, timber, wildlife, flood prevention, water supply, power, navigation, recreation, and other requirements. Moreover, the federal government and the states should be expected to provide adequate protection and management of lands under their administration

field representatives of the division chief are Arthur M. Piper for the Pacific Coast area with headquarters in Menlo Park, California, and George E. Ferguson for the Atlantic Coast area with headquarters in Arlington, Virginia. They will be known as division hydrologists. Division hydrologists for the Rocky Mountain and the Mid-Continent areas will be named later.

A new branch called General Hydrology has been added. Charles C. McDonald has been named chief of this branch. The other three branches are Ground Water, Surface Water and Quality of Water.

Old Wood Still Strong

Age does not affect the strength of wood, according to studies made by the Forest Products Laboratory of the USDA Forest Service.

A recent test was made on floor joists in the Octagon Building, 18th Street N.W. and New York Avenue, Washington, D. C. Mechanical tests showed these timbers to be as strong as when they were installed more than 150 years ago. The joist strength varied little from what might be expected of similar newly-cut timbers. No sign of decay or other deterioration was found where joists had been well protected.

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1956 AAAS Annual Meeting in New York

The 1956 annual meeting of the American Association for the Advancement of Science is scheduled for New York City, New York, December 27 through 30, at the Hotel Martinique.

Section O (Agriculture) has arranged a program around the theme *Grasslands in Our National Life.* The Soil Conservation Society of America is one of 18 scientific organizations co-sponsoring this program.

It includes sessions on forage production, evaluation of forages, economics of forage, ecology of grasslands, range management, agricultural meteorology as related to grasslands, forage utilization, and applications of engineering such as grasslands machinery and equipment, structures and irrigation systems.

W. J. Klein in New Position

W. J. Klein has been appointed vice president and director of sales, Tractor Group, Allis-Chalmers Mfg. Co., Milwaukee, Wisconsin.

Klein had been president and general sales manager. W. L. Voegeli will serve as general sales manager. He had been assistant director of engineering.

News Notes

PRESIDENT'S COLUMN

In my closing column as president of your *Society*, I wish to salute Tulsa—for a magnificent 1956 annual meeting. I think all of us who were there sensed the warmth of genuine welcome that was sustained throughout our visit.

The meeting was inaugurated by a much-needed soaking rain that had *Society* officers delightedly splashing their bare feet in the runoff of the city streets. But the skies cleared by the afternoon of the field trip to the Double Creek Pilot Watershed project and the wonderful barbecue that followed.

More than 600 persons were registered, with high attendance at every session, taxing the facilities of the hotel. It was good to see many ladies sitting with us.

Nearly 450 people attended the banquet at which the Honorable Clifford Hope was the chief speaker. Arrangements were superbly handled, and we are indebted to Myron Hurd and all the many folks who worked with him on local facilities. The special events for ladies, under the chairmanship of Mrs. O. H. Holman, were greatly enjoyed.

Not only in arrangements and attendance, but in quality as well, the meeting was highly successful. The program was varied and interesting, with prominent speakers from all parts of the country. Bill Endersbee and his program committee did an outstanding job.

Most of the presentations will find a place in the pages of the *Society's* JOURNAL, for they were solid stuff given in attractive style. From the opening address by the Master of the National Grange, Hershel Newsom, who challenged the *Society* to assume professional leadership in conservation, to the closing paper of the symposium presented by the *Society's* land utilization committee, the meeting was one of which we can well be proud. You will learn of other conference highlights in this and subsequent issues of the JOURNAL.

It seems to me that the *Soil Conservation Society of America* is rapidly maturing. The Sunday evening session at the Tulsa meeting—on ways to strengthen SCSA chapters—illustrated progress beyond anything we have had before. Many chapters have accomplished definite results in their local communities and states, and others are organizing to undertake specific projects. Much of the vigor and growth of the *Society* will depend upon such Chapter activity.

This year many of the *Society's* national committees suggested changes and improvements in *Society* structure or activity which will help us to develop a program ahead. Bolstered by these suggestions from the membership, the council was able to report to the business luncheon a program for 1957 which may serve to guide both national and chapter activities. You will read more of this through the JOURNAL and Chapter News Letters. A double-barreled theme was also adopted for the coming year, in which the *Society* will stress water and the shift from agricultural to non-agricultural use of land.

I think you will be glad to know that the *Society* is financially in the black, that there has been more than a 10 percent increase in membership during the past twelve months, and that our new acting editor, Al Bull, has gotten well under way by most satisfactory production of this and the preceding issue of the JOURNAL.

The *Society* is becoming organized to do a big job. Now more than in its formative years, it can turn attention to program and objectives. The goals for 1957 will help us to declare ourselves. This is of paramount importance, for it is what we do and what we stand for that will permit the *Soil Conservation Society of America* to become a strong professional force in the conservation field. And to do this we need not only organization, program, and objectives, but the help of everyone who has any professional competence in conservation.

We need in the *Society* a great many people with a great many kinds of training and experience if we are to adequately contribute to the solution of the many complex problems that must be solved if our rapidly increasing population is to have the high standard of living that it has grown to demand.

Only by coordinated attention to the *science and art of good land use* can this *Society* assume the professional leadership in conservation that is our unique and solemn opportunity. That is the challenge that lies ahead. I am sure that the *Society* will meet the challenge. It is this conviction even more than other satisfactions, of which there have been many, that has made it a privilege to serve as your president during 1956.

The response to the challenge before us will take shape more clearly during the coming year. The chapters, the committees, and the new officers and council members for 1957 hold a great deal of promise. All of us as members need to give them and the *Society* our full support. By the time of the next annual meeting the *Society* can then stand stronger and greater than ever before.

The next meeting is scheduled for August 28-31, 1957, at Asilomar, California, a beautiful site on the Monterey Peninsula. I hope I can get there, and I have marked it on my calendar. I hope you will mark it on yours as well and that you will be able to attend. By that time it will be more important than ever to be a member of the Soil Conservation Society of America.

—EDWARD H. GRAHAM, *President*

Outstanding Journal Articles For 1956

The selection of the most outstanding JOURNAL articles during 1956 was announced at the banquet session in Tulsa by Elmer L. Sauer, member of the editorial board. The winning articles are:

Extension's Opportunity in Resource Use Programs, Walter C. Gumbel.

Behavior of Water on the Land, Lloyd L. Harrold.

Vanishing Crop Land, E. A. Norton.

Annual Meeting

Society members from 36 states, the District of Columbia, Puerto Rico and two Canadian Provinces attended the 11th Annual Meeting in Tulsa, Oklahoma. Five hundred sixty-six registered at the desk and many others were in attendance at the barbecue and other special sessions.

The Oklahoma hosts treated those in attendance to real western hospitality with a visit to the Todd Ranch. Those on the tour saw cattle and grass in abundance despite the drouth of 1956. Later on Monday evening Clay Potts provided a barbecue feast for the entire membership in attendance. The meal was served with the compliments of the Tulsa Farm Club and the Agricultural Production Committee, Tulsa Chamber of Commerce.

Many Oklahoma members served on committees regarding local arrangements. One of the most popular features proved to be the "early bird" awards provided those who were early in reaching the sessions.

In his opening remarks President Graham called for broader and more effective training of conservationists. He also suggested the *Society* might well play a lead role in bringing about the coordination of conservation activities.

Herschel Newsom, in his keynote paper, stated: "This *Society* can, if it will, help pioneer new and necessary paths for the

people of our country. There is no myth in the statement that we are adjusting ourselves to our resources. The pressures of a generally prosperous population and our great industrial development require it. In this situation, the professional conservationist has a vital role to play. You can help lead, if you will. It is your prerogative."

Congressman Hope of Kansas, speaking at the banquet to over 400 members, cautioned conservationists to be on the alert for attempts to destroy the watershed program. He stated: "I know the *Soil Conservation Society of America* is not a lobbying organization but it is composed of men and women who love the land, who passionately believe in conservation, and who realize that soil and water conservation are problems which go together and which must be planned and carried out as one program. I am sure that as conservation minded American citizens all of us can and will find ways to make our views known if our present conservation program is endangered by unwise legislative proposals."

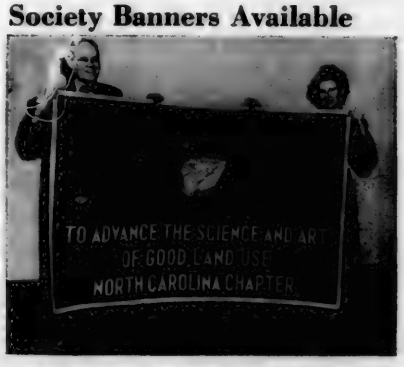
And so it was until the end of the convention on Wednesday afternoon when the technical committees made their contribution to the program. The six hundred in attendance will long remember the program, their many new friends and the hospitality of the Oklahoma members.

Annual Meeting Papers Available

Registrants at the recent annual meeting who failed to obtain copies of papers presented may request them from the national office at no additional cost. Non-registrants may secure the papers by sending $1 to cover cost of assembly and mailing. Single papers may be secured for 10c each.

The papers are in mimeographed form and later several of them will appear in the JOURNAL OF SOIL AND WATER CONSERVATION. Please check the July issue of the JOURNAL for the program of the recent meeting.

Society Banners Available



Chapters desiring banners for use at their meetings, exhibits, etc., may now order them from the national office. They are sold to chapters at cost—$30—$35. Pictured above is the banner recently prepared for the North Carolina Chapter. The banner is four by six feet with a green background and orange letters. The Society emblem is prominently displayed on the banner.

Membership At New High

The membership of the *Soil Conservation Society of America* has reached a new high as reported by Harold M. Rhodes, chairman of the membership committee. A total of 6,464 members were on the rolls on October 1, 1956.

Oklahoma led all other states with a total of 422 members and was followed by North Carolina with 305, Michigan with 248. The total membership by states is shown by the chart below.

Records list 98 Canadians as members. Several were present at Tulsa and the Ontario Chapter members presented the *Society* with the Canadian flag to use at future meetings of the organization. Other foreign members in the *Society* total 269.

During the period between the 1955 annual meeting and the recent meeting in Oklahoma, 1,959 new and reinstated members joined the *Society*.

One of the big problems is the number of annual delinquents. This year 1,251 dropped their membership in the *Society*.

States with the largest gain in membership during the past year were Oklahoma with 339, South Dakota with 87, North Carolina with 83, Illinois with 74, Nebraska with 64, followed by Kansas, Maryland, Michigan and West Virginia with 56 each.

Secretary Pritchard reported that at the Buffalo convention in 1952, 4,262 individuals were members of the *Society*. In subsequent years the membership was as follows: 1953 (Colorado Springs)—5,062, 1954 (Jacksonville)—6,009; 1955 (Green Lake)—5,717.

During 1956 ten additional chapters joined the *Society*. These included: "Show Me" (Missouri), All Ohio, East Tennessee, High Plains (Kansas), East Central Oklahoma, Big Hunt (Oklahoma), Stillwater (Oklahoma), Idaho, Southwest Oklahoma. Bob White (Kansas).

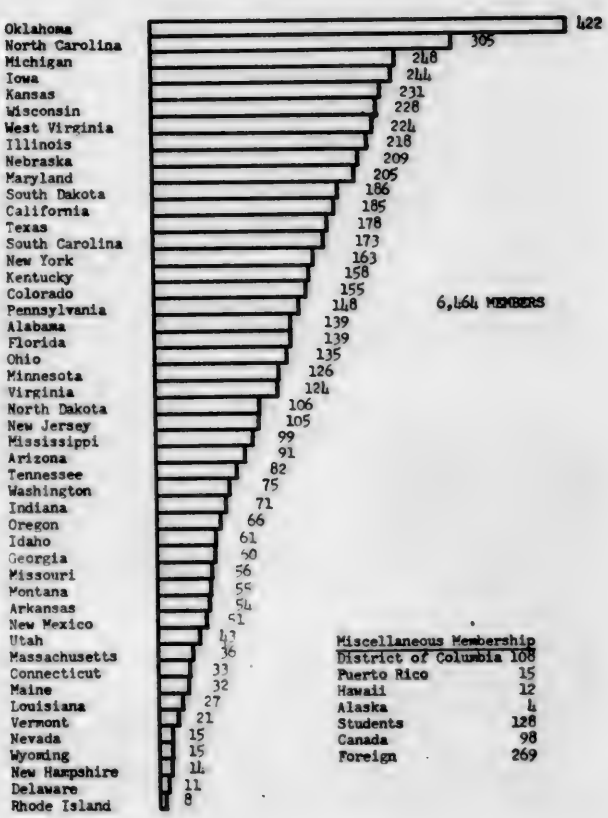
Fred A. Wirt Deceased

Fred A. Wirt, charter member of the *Society* and elected a Fellow in 1952, died suddenly on November 6 at his home in Rock Hill, South Carolina. He and Mrs. Wirt had moved to Rock Hill only three months ago after his retirement following 34 years of association with J. I. Case Company.

Mr. Wirt was well-known for his leadership in soil and water conservation. His early work in the southern states dealt with field equipment for terrace-building. He served on the national council of the *Soil Conservation Society of America* for many years.

Endersbee Has Heart Attack

William J. Endersbee, chairman of the annual meeting program committee, suffered a heart attack following the *Society's* annual meeting and is confined to a hospital at the present time. His many friends wish him a speedy recovery.



Oklahoma led all other states in membership on October 1, 1956, as shown by this chart. Oklahoma also led in securing new members with a total of 339 new members. This was 16.8 percent of the 1,959 new members secured during the year. Total membership reported at Tulsa was 6,464—the highest at any convention period.

J. S. Russell Elected President for 1957

J. S. Russell of Des Moines, Iowa, was elected president of the *Soil Conservation Society of America* in the annual election conducted by mail ballot of all the members. Russell was nominated for the office by several chapters and was unopposed after having served for three years as treasurer and for one year as first vice president.

J. S. Russell

Russell is a graduate of Grinnell College and received an honorary Ph.D from that institution in June, 1956.

He farmed for several years prior to military service in 1918. Following the war he entered the newspaper field and accepted his present position as farm editor of the *Des Moines Register and Tribune* in 1925.

During World War II he served as assistant War Food Administrator. He traveled in Europe in 1948 with a Midwest farm delegation. In 1952 he made a world tour as consultant for the Technical Cooperation Administration and in 1954 was appointed by the Department of Agriculture on the Trade Commission to visit the Far East. The same year he was appointed to the Federal Reserve Board.

He is a past member of the agriculture committee of the U. S. Chamber of Commerce, member of the Board of Trustees Farm Foundation. He is chairman of the agriculture committee, Des Moines Chamber of Commerce and chairman of the National Farm Institute.

Mr. Russell is the author of numerous short articles on studies he has made of land use conditions in the United States as well as other parts of the World.

First Vice President

Elected first vice president of the *Society* for 1957 is Russell G. Hill, East Lansing, Michigan. Hill is executive secretary of the Michigan State Soil Conservation Committee as well as extension specialist in soil conservation at Michigan State University. He is a native of that state and a former teacher of vocational agriculture. He obtained his B.S. and M.S. degrees at Michigan State University.

Russell G. Hill

Hill has long been active in the *Soil Conservation Society of America* and served as treasurer for five years. During 1956 he was second vice president and has served a total of nine years—longer than any other individual on the national council. He was chairman of the annual meeting program committee in 1955.

He was elected a Fellow in 1953. He is holder of a Distinguished Conservation Service Award presented by Nash Motors Company.

Second Vice President

Second vice president for 1957 is J. K. Vessey, Milwaukee, Wisconsin. Vessey is assistant regional forester, U. S. Forest Service. He is Chief of the Division of State and Private Forest Cooperation in the Central Region.

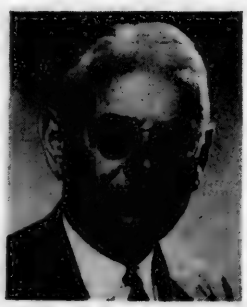
J. K. Vessey

Vessey is a native of Pennsylvania and graduated from Penn State University. He spent eight years in private business before joining the Forest Service. He has served in many capacities with that agency and only recently transferred to Milwaukee after serving for six years as Chief of the Division of Information and Education in the Northern Region with offices at Missoula, Montana.

Vessey is a charter member of the William Penn Chapter, *Soil Conservation Society of America*. He served as chairman of the *Society's* annual meeting program committee in 1953, chairman of the committtee that developed the *Society's* new and revised objectives, and previously filled an unexpired term on the national council.

Treasurer

Re-elected treasurer for a second term was Howard F. Barrows, conservationist for Austin-Western Works at Aurora, Ill. Barrows is sales promotion manager for that company and has long been active in the soil conservation movement. He is a past president of the Chicago and National Advertising Association. He and Mrs. Barrows reside in Hinsdale, Illinois.



Howard F. Barrows

Council

Elected council member at large to serve a three-year term was Walter C. Gumbel of Fairmont, West Virginia. Gumbel has served as editor of the JOURNAL OF SOIL AND WATER CONSERVATION and only recently resigned from that position. In his daily work he is conservationist for Monongahela Power Company. His work involves promoting, developing, and coordinating conservation among agricultural, industrial and urban groups.

Walter C. Gumbel

Gumbel has previously served as a county agricultural agent, extension soil conservationist in West Virginia and state conservationist for the Soil Conservation Service in Pennsylvania. He is a Fellow in the *Soil Conservation Society of America*.

H. G. Bobst, Lincoln, Nebraska, was elected to the national council for a three-year term to represent the membership in Montana, North Dakota, South Dakota, Nebraska, Wyoming, Colorado, Kansas, Oklahoma, New Mexico and Texas.

H. G. Bobst

Bobst is state conservationist for the Soil Conservation Service. He is a native of Kansas and a graduate of Kansas State College. He is a past chairman of the Lincoln Chapter and has served the *Soil Conservation Society of America* in many capacities.

Alexander H. Veazey, Raleigh, North Carolina, was elected to the council of the *Society* for a three-year term to represent the *Society's* Southeastern Region. He will represent the membership in Florida, Georgia, South Carolina, North Carolina, Tennessee, Alabama, Mississippi, Louisiana and Arkansas.

A. H. Veazey

Veazey is a graduate of North Carolina State College and taught vocational agriculture for seven years before joining the Soil Conservation Service. He served in the U. S. Army as a Lt. Colonel and is currently assistant state conser-

vationist in North Carolina. He has been active in various *Society* affairs for many years.

Edward H. Graham, president for 1956 will serve on the council for 1957 as immediate past president. He will succeed Austin L. Patrick. Other retiring council members include: Frank C. Edminister, New Brunswick, New Jersey; Donald A. Williams, Washington, D. C.; J. Selby Young, Colorado Springs, Colorado.

The annual election is held each year by mail ballot. Nominations sent by chapters or by petition appear on the ballot. The nominating committee may also consider nominations submitted by individuals. For a full explanation of the nominating procedure request a copy of the constitution and by-laws from the national office at 838 5th Avenue, Des Moines 14, Iowa.

Ballots are counted by a special election committee appointed by the president. Richard Bullard, Cecil Saddoris, and A. S. Thoreson, of Des Moines, Iowa, served in that capacity during the recent election of officers for 1957.

Convention Site for 1957; 1958

The 1957 annual meeting of the *Society* will be held earlier than usual next year to allow members with families to attend as part of their vacation. The meeting will be held at Asilomar Beach State Park, Pacific Grove, California. This is on beautiful Monterey Peninsula and the park has economical accomodations of many types.

Dates for the 1957 meeting are August 28 to 31. Make your plans now to attend.

The San Francisco Bay and other Western chapters are already working on local arrangements. Herbert A. Hopper, council member for the Western Region, has been active in advance arrangements. Several California members attended the convention at Tulsa and told of the plans being developed.

1958 Site

Several chapters made bids for the 1958 meeting. Maryland, Southern New England, South Dakota and North Carolina Chapter representatives appeared before the national council.

After considering many factors, North Carolina was selected. The 1958 meeting will be held in Asheville, with the exact date to be determined later.

Already several chapters are interested in the 1959 and later conventions. If your local chapter is interested their bid should be submitted at an early date.

News from Our Chapters

San Francisco Bay

The chapter met on November 5 to hear Mr. William L. Berry, Chief, Division of Resources Planning, Department of Water, Sacramento, California, discuss "California Water Plan." Mr. Berry has been in charge of the development of the California Water Plan which will be presented to the legislature in 1957 as the master plan for future water development in California.

The chapter has chosen as theme for their 1956-57 series of meetings the subject of "Water." The theme will carry over into the 1957 meeting of the parent organization to be held at Asilomar Beach State Park, Pacific Grove, California, August 28-31, 1957.

Southwest Oklahoma

The chapter met at Quanah Parker Lodge, Cache, Oklahoma, on October 6 with Ray C. Murrell, chapter chairman, presiding. The program was under the arrangement of Bill Brady and consisted of a tour of the Wichita Wildlife Refuge under the supervision of Julian Howard, manager.

Georgia

The Georgia Chapter met in Thomaston, Georgia, on August 28 to adopt a program for remainder of 1956-57. Chairman of the Chapter, elected at the meeting, is Jackson Bennett. Paul D. Schumacher will serve

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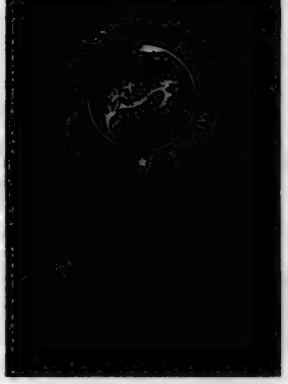

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as vice chairman while E. H. Thomas will serve as secretary-treasurer.

The major goal of the chapter was established as the need to secure 100 new members. A committee, with Dan Searcy as chairman, was appointed to work toward the goal.

Michigan

The Michigan Chapter covers the entire state but holds regional meetings for the benefit of the members located nearby. On October 8 a regional meeting was held at Waldenwoods, Hartland, Michigan. The meeting convened at 2:30 p.m. with a coffee followed by a tour of the Brighton area.

Following dinner, a short business meeting was held, then a panel discussion on "Conservation Problems in Area of Rapid Urban Expansion" provided the program.

Charles Kaufman, Extension Service, served as moderator. Vincent Madison, Detroit Edison Company; Horace Brewer, Consumer Power Company; Don Gill, Director, Washtenaw Soil Conservation District; Frank Suggitt, Michigan State University; and Sanford Farness, Wastenaw Planning Commission, were other members of the panel.

Keystone

The Keystone Chapter met at Millersville State Teachers' College in Pennsylvania, August 17-18, 1956. Nearly 70 people attended the two day session. The chapter presented their conservation award to Raymond Campbell, as the outstanding conservation farmer of the year. An innovation this year, following the banquet, was a visit to the planetarium of Franklin and Marshall College.

Chairman of the Keystone Chapter for 1957 will be Clarence Bryner. Howard Busch was elected vice chairman; Nicholas Holowatch, secretary-treasurer. H. C. Fetterolf, Egbert Musser, and Walter Steputis, were elected to the council of the chapter.

Iowa

The Iowa Chapter met at Iowa State College on November 2 to hear a full day program. Chairman Joe Colgan reported on the national meeting at Tulsa and called upon the chapter for renewed effort in 1957.

E. R. Duncan, agronomist, Iowa State College, discussed subsoil moisture and the new Neutron Moisture meter. George Holmberg, SCS, told of grass for gully control. Max Soeth, chairman of the Iowa ASC, led a discussion on the soil bank conservation reserve. E. P. May, of Krick and Associates, presented the topic of weather modification. Fish pond management was told by Sylvan Runkel, SCS. Rex Conn, agricultural editor of the *Cedar Rapids Gazette*, explained how to get more conservation news into print. Richard Wilcox, SCS, outlined the changes in the small watershed act as made by the last session of Congress.

Officers elected for 1957 included Alvin F. Bull, chairman; Cecil Saddoris, vice chairman; Louis Kuester, secretary; Byron Lodwick, treasurer.

J. S. Russell, president of the *Society* for 1957 spoke briefly about the national program plans.

Mississippi

The Mississippi Chapter of the *Society* has increased membership during 1956. The annual meeting of one chapter was held at the Edwards Hotel in Jackson on November 6, 1956.

H. Wayne Pritchard, executive secretary, appeared on the program.

Florida

The annual meeting of the Florida Chapter was held at Lakeland, June 22-23, and was one of the best in the history of the chapter. Chapter members were informed about the work of the Soil Science Foundation, pastures in Florida, Florida's Water Resources Study Commission, the importance of soil and the history of civilization.

Officers elected for 1956-57 include L. M. Hollingsworth, chairman; Howard A. Matthews, vice chairman; D. H. Esry, secretary-treasurer. Council members elected include William G. Beatty, Reid Powell, William S. Hass, J. H. Herbert, Jr., Walter W. Shaffer, William R. McCall, Edwin G. Jesse, E. Loy Strickland.

Arizona

The Arizona Chapter met in the Sun Room of Hotel Desert Sun, Phoenix, on October 2, 1956. Wayne Kessler served as chairman of the program committee. Those appearing on the program included Senator Hayden, Robert V. Boyle, state conservationist for the soil conservation service and Rich Johnson, editor, *The Arizona Farmer-Ranchman*.

New Jersey

The New Jersey Chapter arranged a fall field day on September 15 in cooperation with the Warren Soil Conservation District. About 50 members congregated at the Rymon farm equipment firm in Washington. From there the group traveled by bus to visit 12 farms, Pequest Watershed Project, Hackettstown Fish Hatchery and Great Meadows.

Big Hunt

The Big Hunt Chapter in Oklahoma held their charter night meeting on September 20. Harry M. Chambers, national council member, presented the group with their charter. Several committees were appointed by chairman R. N. Wall to function during the organization stage. Robert E. Smith was to serve as chairman of a committee to develop chapter constitution and by-laws; Glenn Beacham, chairman of the nominating committee; and A. Pete Ottinger and his committee to arrange activities and meetings. Rex Burke served as membership chairman and reported 35 members at the charter night meeting.

Virginia

The Virginia Chapter met at the Virginian Hotel in Lynchburg, September 21-22. William H. Allaway of the Agricultural Research Service, discussed "Research in Modern Conservation Farming." "Current Developments in Modern Conservation Farming" was discussed by James K. Farley, SCS. R. L. Rees, Virginia Polytechnic Institute, spoke on "Spreading Current Developments Across the Board."

President E. H. Graham spoke at the banquet session. Also on the program were Garland Kidd and William E. Cooper.

West Virginia

Increasing rurban (rural-urban) population pressures in West Virginia were emphasized by Louis A. Wolfanger of Michigan State University at the 11th annual meeting of the West Virginia Chapter, at Jackson's Mill.

These pressures point to the need for rural zoning laws and more cooperative rurban development. The need for identifying lands to be set aside permanently for agriculture and the impossibility of bringing back a rurban settlement as an agricultural area were pointed out by Wolfanger.

Frank W. Glover was elected president, succeeding John Grant. Floyd F. Rothlisberger was named vice-president with E. V. Wickline re-elected secretary-treasurer.

Area chairmen elected were Donald A. Robey, Harry Summers, Noel P. Cochran, Joseph Rieffenberger, William H. Curry, Don E. Williams, and Denver C. Yoho.

Committee chairmen named for 1957 were Roy Hamilton, program; Joe Kuykendall, activities; Glendon P. Burton, booklet sales; Berma Yerkey, membership; John Grant, publicity and nominating; Floyd Rothlisberger, awards; John Pew, "Chapter Chats" editor; Boyd J. Patton, technical; Walter C. Gumbel, watershed; L. L. Lough, water legislation; Ralph P. Buckley, constitution and by-laws.

Interesting Letters

Following are excerpts from letters mailed to the national office by members and others. Space will not permit a full review of the letters.

Kasetsart University
Bangkhen
Bangkok, Thailand

Dear Secretary Pritchard:

The ballot envelopes reached here on October 9 and they need to be posted by October 1st. Next year you will need to do your mailing earlier so we can get the ballots off to you.

Thanks for thinking of the members in the far corners. We do appreciate it. Having spent most of my life abroad in professional work I do feel the isolation. The publications are the things which make the difference and I spend a great deal of time trying to keep up with the literature.

I am enjoying very much this opportunity to be back here with my former associates—gray hairs are at a premium here. It is nice not to have to vegetate just because the 65 deadline has passed. I shall continue with the revision of the reconnaissance soil group map I did some years ago. I shall be doing some teaching for the master's degree.

Sincerely,
Robert L. Pendleton

Bangkok, Thailand

Dear Wayne:

Greetings from Bangkok! I'm afraid I can't run over to Tulsa for this year's convention but I wish the *Society* its most joyous and fruitful convention. The JOURNAL, I believe, is more thoroughly read and appreciated in this distant land than in the United States. The *Society* sheds its light throughout the world!

Budgets are a problem everywhere. Just now I am trying to combine and coordi-

nate, and reduce, the 1957 items for our new Extension and Research Project. I have been filling in on the Extension Advisor's job as well as handling agricultural information.

Please remember me to my friends.

Wellington Brink
(Former Editor of
Soil Conservation)

The following letter was received from a program chairman of a Garden Club who had written the national office for names of chapter members in her state who might assist with a conservation program. For obvious reason the names and places have been deleted. The letter points out that many are searching for the leadership that can be provided by members of the Society.

October 22, 1956

My Dear Mr. Pritchard:

Your letter of November 7, 1955, closes with "I hope I have been of some assistance to you." It is probably no fault of yours that all I got was a "run around."

You referred my inquiry about a conservation program to Mr. ———— of the ———— Chapter. I gave him date, time, location, subject, etc. He referred me to an area conservationist of the Soil Conservation Service who in turn referred me to the State Conservationist, who in turn referred me to Department of Forests and Waters where I got no results. I have not as yet written again to all these polite and promising gentlemen because we needed a program and not correspondence.

Our County Agent finally gave us the information. He belongs to our club and is now Conservation Chairman.

I had thought yours a Society of private citizens and not a branch of the U.S.D.A. What kind of a program was the local chapter of your Society supposed to give us? So many such programs are deadly dull, lacking vital local interest, and clubs ask for fewer and fewer. Yet the subject is most important to everyone.

Yours very truly,
Name withheld

Letter to SCSA Members From First Society President

To: Soil Conservation Society of America Members

You can be assured that I personally, and many others, have a deep interest in the welfare of our *Society*. Some of us worked hard for four years to place it on a firm and sound foundation. Since that time, SCSA has had 11 years of study and sound growth.

The support by you 7,000 members has been fine. Administration and management of the *Society* is excellent and is in good hands. The objectives and goals are challenging to all conservationists. Its name is unique. The SCSA is supported and highly respected around the world. I am proud, as I hope you are, to be in a position to benefit from it and to make a small contribution to its activities and advancement.

The *Society* is only reaching 7,000 members. It can and should reach 20,000 easier than you think. I will try to prove that point later. Now for a few high spots.

Please refer to Volume 1, Number 1, issue of our JOURNAL. Particularly study our statement on "Why Another Society." Review the original objectives of the *Society* and see how they have prevailed in principle and grown in keeping with the advancement of the *Society*. Read all of the Presidents' messages at the annual meetings if you can get copies.

In a short time, I am certain you will be advised as to the Society's goals for 1957. Study them carefully. A number of them can be accepted as chapter activities for 1957; a challenge to the membership and the chapters—something that the chapters can get their permanent teeth into.

This is a year when we should exert every reasonable effort to put our *Society* on an unquestionably permanent basis. The attendance at the Tulsa meeting was 600 or a little more. The program was one which I wish you all could have heard and had a part in it.

Next year (1957) we meet in Asilomar, California. Here's a chance to include a vacation with your attendance at the meeting.

We will meet in Asheville, North Carolina in 1958. There you will enjoy southern hospitality at its best. It will not be surprising to me to see 1,500 to 2,000 in attendance at Asheville, which I think is pretty good and I am certain that all of the members in the Southeast are going to help North Carolina make that meeting one not to forget.

Earlier, I promised that I would try to prove that our membership could be doubled or trebled if we all do our part. Here it is:

1. Each member see to it that he does not let his own membership lapse.
2. Each member give his professional or non-professional friends an *opportunity* to become a member. People like to be informed and invited. No high pressure is needed. Try it yourself. You will be agreeably surprised. While you are about it, get members who want to be permanent members and who are willing to give more than they expect to get in return. As a result they will get more than they give.

This note is a sort of "pep talk." Join me if you think I'm right—then next year and the following years will be big ones with the SCSA.

R. H. Musser
(First Society president)

H. Wayne Pritchard, left, is shown presenting Harry M. Chambers, chairman, Oklahoma Council of Chapters, with plaque for top membership. Myron A. Hurd, right, appears pleased.

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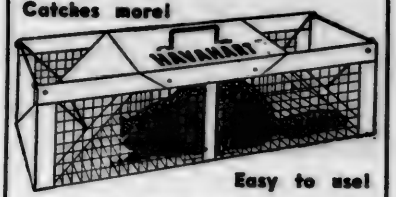

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Photos from the 1956 Annual Meeting, Tulsa, Okla.

Delegates visited the Double Creek Pilot Watershed Project and are shown here at the Todd Ranch in Caney Valley Soil Conservation District making an "on the ground" inspection.

On tour, left to right: David Bartlett, New Mexico; Harrison J. Maker, New Mexico; Mrs. John H. Cross, Alabama; Robert A. Young, New Mexico, and Dolph Elam, Arkansas.

Many educational exhibits were arranged in convention hall by soil conservation districts, conservation agencies and industrial firms.

Tulsa had first rain in many weeks. Holly Montgomery, J. S. Russell, Fred Sykes and Ross Davies wade for camera.

Saying good-bye until next year. Mrs. Howard F. Barrows, left, Hinsdale, Illinois, and Mrs. Carl B. Brown, Washington, D. C.

North Carolina delegates, Charles L. Hunt, left, and R. B. Bailey, right, discuss with President Graham 1958 annual meeting to be held in their state.

Society Has New Booklet

The watershed management committee has reprinted the six articles dealing with watersheds that appeared in the JOURNAL during 1955 and 1956. The reprint was made into an attractive 28-page publication with a cover drawing by Felix Summers and is entitled "Our Watershed Resource."

The reprint is composed of six chapters as follows:

1. *The Nation's Available Water Resources*
2. *The Nation's Water Requirements.*
3. *The Nation's Water Resource Problems*
4. *Measures Needed to Manage Watersheds*
5. *Managing the Watershed Resource*
6. *Planning and Developing Our Watershed Resource*

A number of *Society* members contributed to the authorship of the chapters, including: W. G. Shannon, Carl B. Brown, W. E. Hudson, W. B. Langbein, K. A. MacKichan, Harry F. Blaney, M. D. Thorpe, T. W. Edminster, Frank Erickson, William Abrams, Guy Fasken, Keith Beauchamp, Byron Barnes, E. A. Coleman, Robert Struble, A. R. Croft, and Russell G. Hill.

Individuals desiring to check the articles may review the *March, May, July and September* JOURNALS for 1955 and the *May* and *July* issues for 1956.

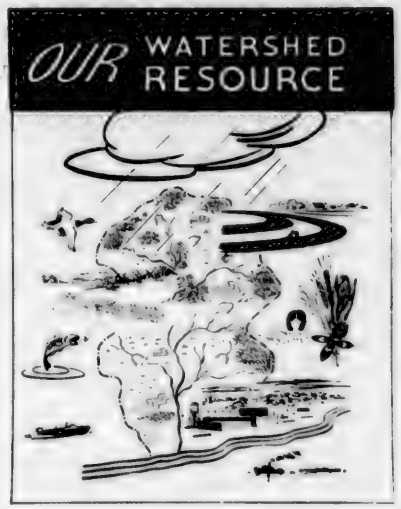
The distribution of the booklet is a service instead of a money raising project. The prices are as follows:

(Shipping expense included)

1 copy	$ .50
10 copies	4.50
25 copies	10.00
50 copies	15.00
100 copies	25.00

Write the national office at 838 Fifth Avenue, Des Moines 14, Iowa, for prices on larger quantities. The back page of the publication may be used to carry the message of a sponsor but it is hoped that such imprinting will be handled by the purchaser.

Society members are encouraged to assist in making the availability of the publication known to watershed groups, associations, and the like.



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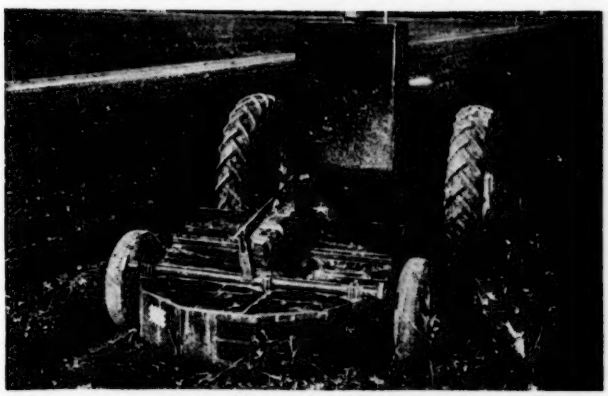

Trailing models may be used with any 2-plow or larger tractor. All models cut 57 inches wide. Special driver shield affords the operator maximum protection.

You cut, shred, and spread stalks or brush, in one continuous operation, with a McCormick No. 25 rotary cutter. Finely shredded crop residues save hours of disking time, improve plowing cover, build soil humus, and contribute to a well-mulched seedbed. With new open-throat design, cutter knives slash tall, rank stalks before being knocked down.

Shredder attachment doubles shredding action. Two twisted knives on additional rotor arm cut and deflect stalks upward into regular cutting knives for extra-thorough shredding action. Stationary shredder arm, mounted on cutter housing, and rear grill further increase pulverizing action. Attachment is quickly removed for other jobs.

Enclosed gear drive turns on heavy-duty ball bearings in oil bath to minimize power requirement and assure longest life.

Your IH Dealer will demonstrate . . . see for yourself the superior cutting action of the new McCormick No. 25 rotary cutter! Available on the liberal IH Income Purchase Plan.

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Please send me full information about the new McCormick No. 25 Rotary Cutter.

Name_____ ☐ Student

Address_____

Post Office_____ State_____

My IH Dealer is_____

My thanks come easily . . . at times

My thanks come easily
When my fortunes rise
And my will is king
And all the world seems my estate.

My thanks come easily such times.

But, wait . . .
Today, let me reflect
Upon those thanks I owe
But which I find
Express themselves less fluently.

Today, let me remember to give thanks,
Not only for the sunlight,
But for those darker hours
That teach me Fortitude.

Let me profess, today, a grateful heart,
Not merely for successes I may know,
But as truly for those failures
That teach Humility.

Let me express my gratitude
For all those petty, inner conflicts
Which, once resolved, breed new Serenity . . .
And for those small, distressing fears
That have their ways of building Hope.

Let me breathe appreciation
For all those poignant slights
That teach me Thoughtfulness,
The wrongs that teach me Fairness,
And for each violated trust
That leaves Loyalty as its lesson.

And let me not forget, today,
To whisper thanks for these:
The contempt that teaches Pity,
The tear that teaches Joy,
The pain that teaches Mercy,
And the loneliness that teaches Love.

So, now . . .
Let me reflect upon these thanks I owe . . .

And let my thanks come easily today!

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